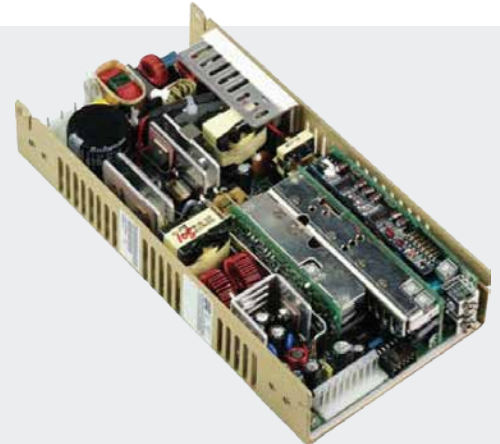


ARTESYN LPQ170 SERIES

175 Watts



Advanced Energy's Artesyn LPQ170 series of AC-DC power supply series comprises two quad output models. Both models offer +5 V, +12 V and -12 V outputs, plus a floating output which on one model can be adjusted over the range 3.3 V to 25 V, and on the other, 3.3 V to 5.5 V. Both models also provide a regulated 5 V standby output. The LPQ173 is rated at 85 watts with convection cooling and 175 watts with 30 CFM forced air cooling; the LPQ172 is rated at 110 watts with convection cooling and 175 watts with 30 CFM forced air cooling. Measuring just 4.25 x 8.5 x 1.5 inches, the power supplies are ideal for 1U (1.75-inch) rack installations and other low-profile applications.

DATA SHEET

Total Power:

110 - 175 Watts

Input Voltage:

85 - 264 Vac
120 - 300 Vdc

of Outputs:

Quad

SPECIAL FEATURES

- Active power factor correction
- IEC EN61000-3-2 compliance
- Adjustable outputs on 1, 3 & 4
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
- Adjustable floating 4th output
- Optional cover (-C suffix)
- RoHS compliant

SAFETY

- UL UL60950
- CB Certificate and report
- CSA CSA 22.2-234 Level 3
- CE Mark (LVD)
- NEMKO EN 60950/EMKO-TUE

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 | Meets 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 | 1.0 mA @ 50/60 Hz, 264 Vac input |
| Output | |
| Maximum power | 110 W convection (75 W with cover) 85 W convection - LPQ173 175 W with 30 CFM forced air (130 W with cover - LPQ172) |
| Adjustment range | 3.3 - 5.5V on main; -12 - 15V on 3rd output 3.3 - 25 V on 4th output - LPQ172 3.3 - 5.5 V on 4th output - LPQ173 |
| 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 | Tracks outputs 1, 3 & 4; 15 to 35% |
| Standby output | 5 V @ 200 mA regulated $\pm 5\%$ |

LOGIC CONTROL

| | |
|------------------|--|
| AC 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 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 °C to 50 °C ambient. Derate each output 2.5% per degree from 50 °C to 70 °C (except for -C version). |
| Storage temperature | -40 °C to +85 °C |
| Temperature coefficient | $\pm 0.4\%$ per °C |
| Electromagnetic susceptibility | Designed to meet IE61000-4, -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 0.75 G peak 5 Hz to 500 Hz, 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 |
|--------------|-------------------|--------------|--------------------------------------|------------------------------------|------------------------|-------------------------|-------------------------------|
| LPQ172 | 5 V (3.3 - 5.5 V) | 0 A | 15 A | 30 A | 32 A | ±2% | 50 mV |
| | 12 V | 0 A | 6 A | 8 A | 10 A | ±3% | 120 mV |
| | -12 V (-12 -15 V) | 0 A | 1.5 A | 3 A | 3.5 A | ±3% | <1% |
| | ±3.3-25 V | 0.5 A* | 2 A | 5 A | 5.5 A | ±3% | <50mV or 1% |
| LPQ173 | 5 V (3.3 - 5.5 V) | 0 A | 10 A | 24 A | 26 A | ±2% | 50 mV |
| | 12 V | 0 A | 6 A | 8 A | 10 A | ±3% | 120 mV |
| | -12V (-12 -15 V) | 0 A | .2 A | 3 A | 3.5 A | ±3% | <1% |
| | 5 V (3.3 - 5.5 V) | 0 A | 10 A | 24 A | 26 A | ±2% | 50 mV |

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. 4th output adjustable 3.3 - 25 V factory set at 5 V.

5. *Minimum loads are required when output set below 5 Volts

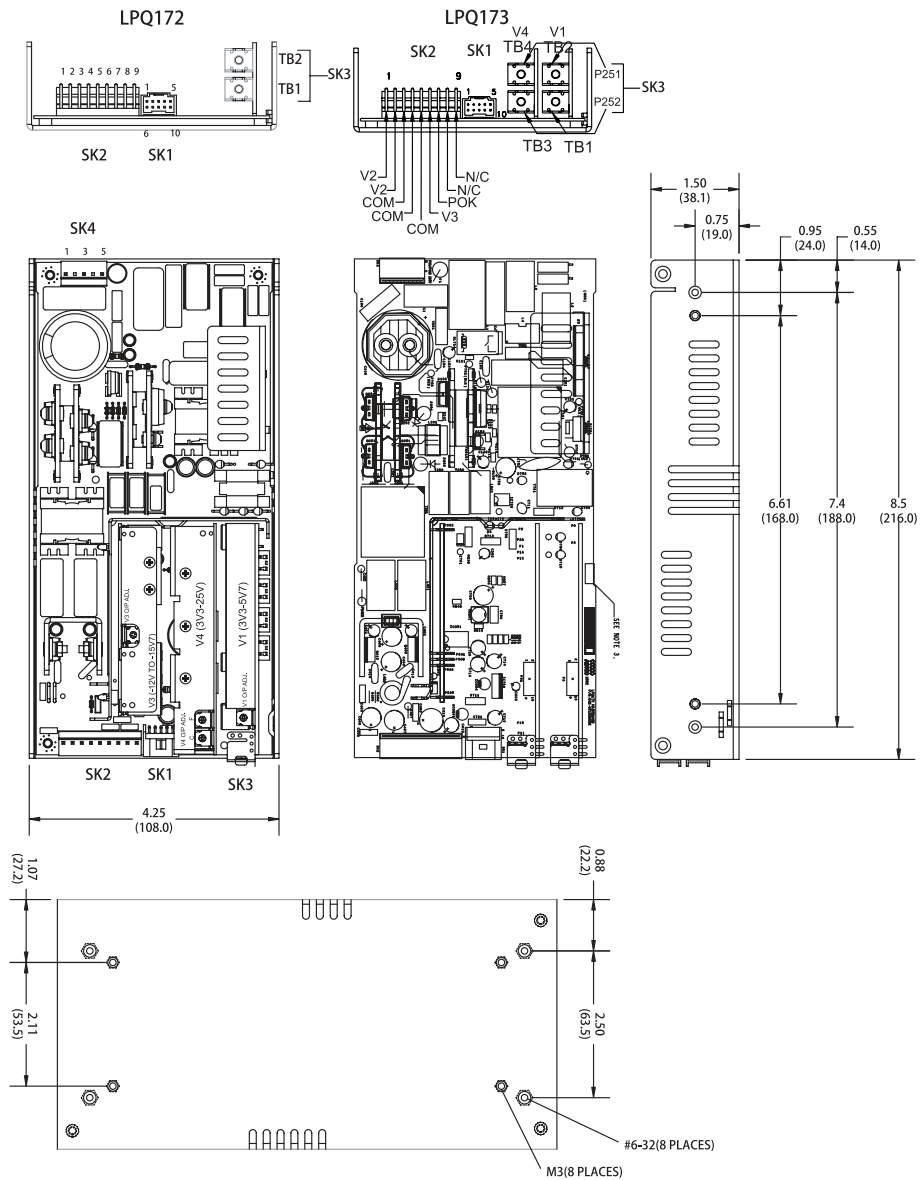
6. Remote inhibit resets OVP latch

7. LPQ173-C has no convection rating.

8. 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 and is limited to 50 °C operation.

MECHANICAL DRAWING



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: 2 lb/0.91 kg

PIN ASSIGNMENTS

| Connector | | LPQ172 | LPQ173 |
|-----------|-----------|-------------------------|--------------------|
| SK1 | PIN 1 | N/C | V4 SWP |
| | PIN 2 | 5V Standby | 5 V Standby |
| | PIN 3 | N/C | +V4 Sense |
| | PIN 4 | V1 SWP | V1 SWP |
| | PIN 5 | Common | Common |
| | PIN 6 | +V1 sense | +V1 sense |
| | PIN 7 | Sense common | Sense common |
| | PIN 8 | Remote inhibit | Remote inhibit |
| | PIN 9 | DC power good | DC power good |
| | PIN 10 | POK | POK |
| SK2 | PIN 1,2 | +12 V | +12V |
| | PIN 3,4,5 | Common | Common |
| | PIN 6 | -12 V | -12V |
| | PIN 7 | POK | POK |
| | PIN 8 | +3.3 V to +25 V (Float) | N/C |
| | PIN 9 | Common (Float) | N/C |
| SK3 | TB-1, 3 | COMMON | COMMON |
| | TB-2 | +5 V (3.3V to 5.5V) | +5V (3.3V to 5.5V) |
| | TB-4 | N/C | +5V (3.3V to 5.5V) |
| SK4 | PIN 1 | GROUND | GROUND |
| | PIN 3 | LINE | LINE |
| | PIN 5 | NEUTRAL | NEUTRAL |

MATING CONNECTORS

| | |
|--|--|
| (SK4) AC Input | Molex 09-50-8051 (USA) Molex 09-91-0500 (UK) PINS: 08-58-0111 |
| (SK3) Main output | Molex series 19141-0058/0063 |
| (SK2) Aux DC Output/Power fail | Molex 09-50-8091 (USA) Molex 09-91-0900 (UK) PINS: 08-58-0111 |
| (SK1) Control Signals | Molex 90142-0010 (USA) PINS: 90119-2110 or Amp: 87977-3 PINS: 87309-8 |
| Astec connector kit #70-841-015, includes all of above | |



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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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