

SMQ Series



- High Power Density
- Compact Design
- 700 W Peak Rating
- DC OK
- Remote On/Off
- Single Outputs from 12 V to 54 V
- 3 Year Warranty

Specification

Input

| | |
|-----------------------|---|
| Input Voltage | • 90-264 VAC (120-370 VDC) |
| Input Frequency | • 47-63 Hz |
| Input Current | • 5.00 A at 90 VAC (SMQ300), 6.35 A at 90 VAC (SMQ400) |
| Inrush Current | • 35 A max at 230 VAC |
| Power Factor | • 0.99 typical |
| Earth Leakage Current | • <2.5 mA at 230 VAC/50 Hz <1.5 mA at 115 VAC/60 Hz |
| Input Protection | • Internal T8 A/250 VAC fuse in line |

Output

| | |
|----------------------------|---|
| Output Voltage | • 12 to 54 VDC - see table |
| Output Voltage Trim | • $\pm 5\%$ |
| Minimum Load | • 1% minimum load required to maintain ripple and regulation ratings |
| Start Up Delay | • 2.5 s typical at 120 VAC |
| Hold Up Time | • 20 ms minimum at 120 VAC & 80% load |
| Line Regulation | • $\pm 1\%$ max |
| Load Regulation | • $\pm 1\%$ max |
| Transient Response | • 5% max. deviation, recovery to within 1% in 500 μ s for a 50% load change |
| Ripple & Noise | • 1% pk-pk, 20 MHz bandwidth |
| Overvoltage Protection | • <130% Vnom, recycle input to reset |
| Overcurrent Protection | • 110-140% of nominal current, auto recovery |
| Overtemperature Protection | • Unit shuts down, auto recovery |
| Remote Sense | • Compensates for up to 0.5 V drop |
| Remote On/Off | • On = TTL Logic High or Open circuit Off = TTL Logic Low or Short circuit |

General

| | |
|---------------------|--|
| Efficiency | • 80% typical |
| Isolation | • 3000 VAC Input to Output, 1500 VAC Input to Ground, 250 VDC Output to Ground |
| Switching Frequency | • 100 kHz typical for PFC, 30 kHz typical for PWM |
| Power Density | • 4.7 W/In ³ (SMQ300), 6.25 W/In ³ (SMQ400) |
| Signals | • DC OK TTL HIGH within 100-500 ms and LOW ≥ 1 ms before loss of regulation |
| MTBF | • 138 kHrs typical to MIL-HDBK-217F at 25 °C, GB |

Environmental

| | |
|-----------------------|---|
| Operating Temperature | • 0 °C to +70 °C, derate linearly from 100% at +50 °C to 50% at +70 °C |
| Cooling | • SMQ: Via internal fan SMU: 22 CFM forced airflow for maximum power |
| Operating Humidity | • 5-90% RH, non-condensing |
| Storage Temperature | • -20 °C to +85 °C |
| Shock | • 15 g (non-operation), 11 ms half sine-wave, 3 times for each axis |
| Vibration | • 10-55 Hz (non-operation) 2 g, sweep time 3 mins, 60 mins/axis |

EMC & Safety

| | |
|----------------------|---|
| Emissions | • EN55022 and FCC Part 15, level B conducted |
| Harmonic Currents | • EN61000-3-2 |
| Voltage Flicker | • EN61000-3-3 |
| ESD Immunity | • EN61000-4-2, level 2 contact, level 3 air, Perf Criteria A |
| Radiated Immunity | • EN61000-4-3, 3 V/m, Perf Criteria A |
| EFT/Burst | • EN61000-4-4, level 2, Perf Criteria A |
| Surge | • EN61000-4-5, level 3, Perf Criteria A |
| Conducted Immunity | • EN61000-4-6, level 2, Perf Criteria A |
| Dips & Interruptions | • EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms Perf Criteria A, B, B |
| Safety Approvals | • UL60950-1, EN60950-1 |

Models and Ratings

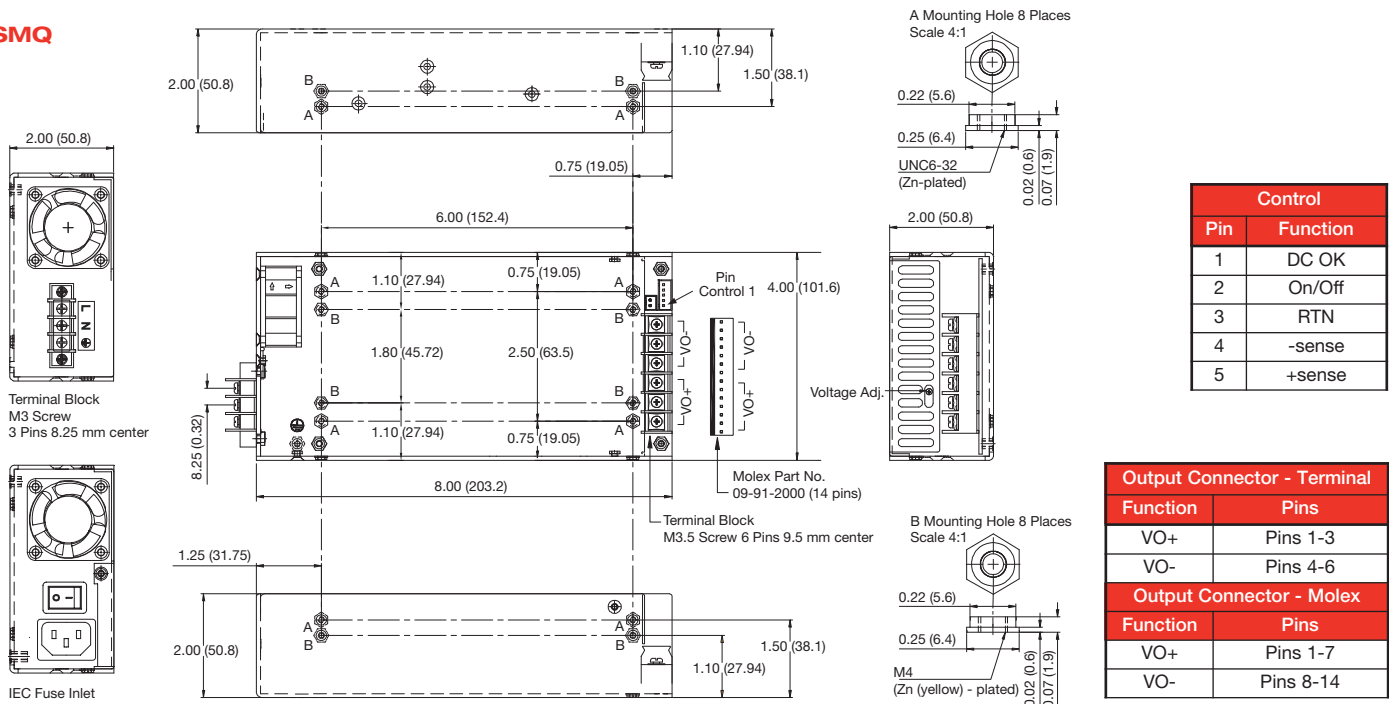
| Maximum Power | Output Voltage ⁽¹⁾ | | Output Current | | Model Number ⁽³⁾ |
|---------------|-------------------------------|---------|---------------------|--|-----------------------------|
| | Preset | Maximum | Peak ⁽²⁾ | | |
| 300 W | 12 V | 25.00 A | 58.33 A | | SMQ300PS12-C |
| | 15 V | 20.00 A | 46.66 A | | SMQ300PS15-C |
| | 18 V | 16.66 A | 38.88 A | | SMQ300PS18-C ⁽⁴⁾ |
| | 24 V | 12.50 A | 29.16 A | | SMQ300PS24-C |
| | 27 V | 11.11 A | 25.92 A | | SMQ300PS27-C ⁽⁴⁾ |
| | 36 V | 8.33 A | 19.44 A | | SMQ300PS36-C ⁽⁴⁾ |
| | 48 V | 6.25 A | 14.58 A | | SMQ300PS48-C ⁽⁴⁾ |
| | 54 V | 5.55 A | 12.50 A | | SMQ300PS54-C ⁽⁴⁾ |
| 400 W | 12 V | 33.33 A | 58.33 A | | SMQ400PS12-C |
| | 15 V | 26.66 A | 46.66 A | | SMQ400PS15-C |
| | 18 V | 22.22 A | 38.88 A | | SMQ400PS18-C ⁽⁴⁾ |
| | 24 V | 16.66 A | 29.16 A | | SMQ400PS24-C |
| | 27 V | 14.81 A | 25.92 A | | SMQ400PS27-C ⁽⁴⁾ |
| | 36 V | 11.11 A | 19.44 A | | SMQ400PS36-C ⁽⁴⁾ |
| | 48 V | 8.33 A | 14.58 A | | SMQ400PS48-C ⁽⁴⁾ |
| | 54 V | 7.40 A | 12.50 A | | SMQ400PS54-C ⁽⁴⁾ |

Notes

- Other voltages are available. Contact sales office for details.
- Standard models have hiccup mode current protection with a high peak load capacity. This peak can be taken for 500 μ s max.
- For U-channel versions without fan/cover, change SMQ prefix to SMU (See connector options for optional connectors). Requires forced air cooling at 22 CFM.
- Available for OEM quantities, contact Sales.

Mechanical Details

SMQ



Notes

- Dimensions in inches (mm). Tolerance: ± 0.012 (± 0.3)
- Control connector mates with JST XHP-5 or equivalent.
- Fan connector is wired in parallel to the internal fan. No auxiliary output is available.
- Weight: SMQ - 2.42 lbs (1050 g) approx.
SMU - 2.09 lbs (950 g) approx.
- Maximum mounting screw penetration: 0.13 (3.2) on bottom side and 0.25 (6.2) on both sides.
- Maximum screw terminal torque: Input: 7 lbs-in (0.8 Nm)
Output: 15.7 lbs-in (1.8 Nm)

| Connector Options | | | |
|-------------------|----------------|---------------------------|-------------------|
| Connector Type | | Suffix to add to part no. | |
| Input Type | Output Type | SMQ (with cover) | SMU (no cover) |
| Screw Terminal | Screw Terminal | -C | Leave blank |
| IEC | Screw Terminal | -D | N/A |
| Screw Terminal | Molex | -E | -E ⁽¹⁾ |
| Molex | Molex | N/A | -F ⁽¹⁾ |

1. Available for OEM quantities, contact Sales.