

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 | • EN61000-3-2 class A EN61000-3-2 class C for loads $\geq 20\%$ |
| 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 class A EN61000-3-2 class C for loads $\geq 20\%$ |
| 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, installation class 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

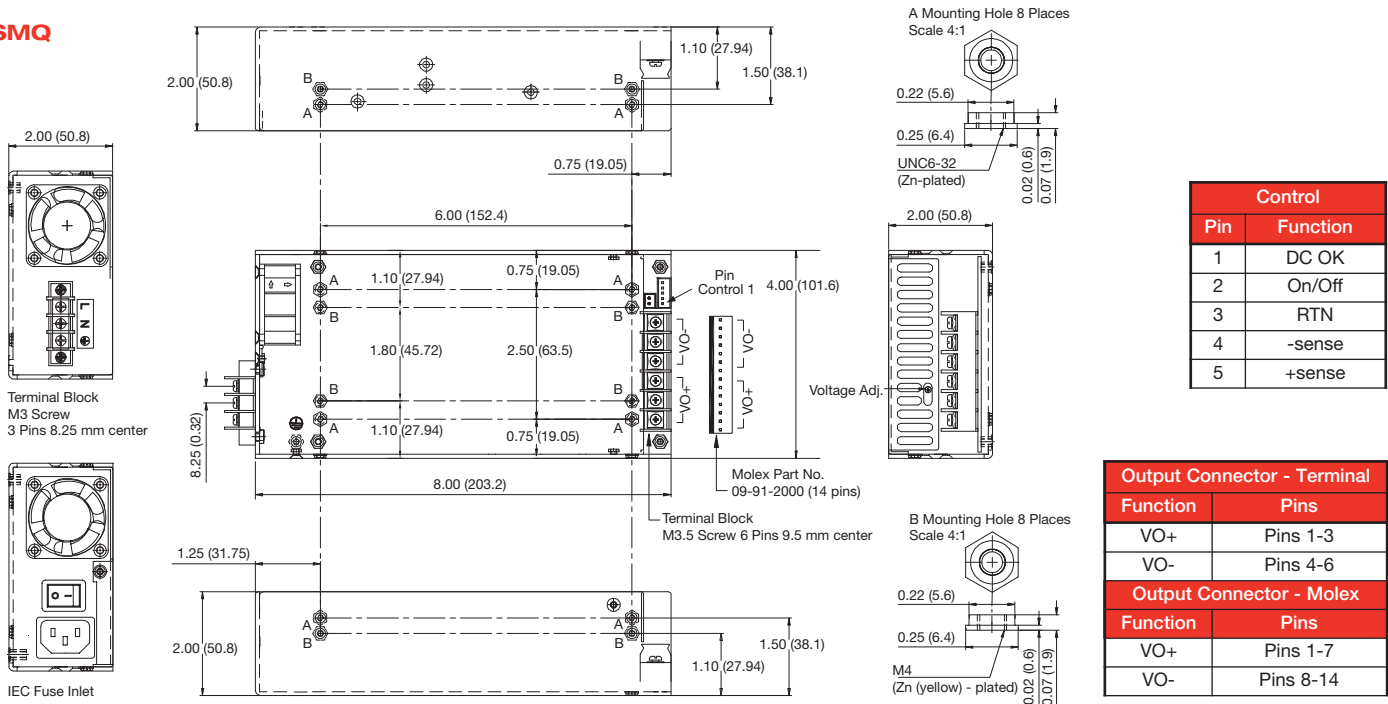
| Maximum Power | Output Voltage ⁽¹⁾ | | Output Current | | Model Number ⁽³⁾ |
|---------------|-------------------------------|---------|---------------------|--|-----------------------------|
| | Preset | Maximum | Peak ⁽²⁾ | | |
| 300 W | 12 V | 25.00 A | 58.33 A | | SMQ300PS12-C |
| | 15 V | 20.00 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

1. Other voltages are available. Contact sales office for details.
2. Standard models have hiccup mode current protection with a high peak load capacity. This peak can be taken for 500 μs max.
3. 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.
4. Available for OEM quantities, contact Sales.

Mechanical Details

SMQ



Notes

1. Dimensions in inches (mm). Tolerance: ±0.012 (±0.3)
2. Control connector mates with JST XHP-5 or equivalent.
3. Fan connector is wired in parallel to the internal fan. No auxiliary output is available.
4. Weight: SMQ - 2.42 lbs (1050 g) approx.
SMU - 2.09 lbs (950 g) approx.
5. Maximum mounting screw penetration: 0.13 (3.2) on bottom side and 0.25 (6.2) on both sides.
6. 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.