

## 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),<br>6.35 A at 90 VAC (SMQ400)          |
| Inrush Current        | • 35 A max at 230 VAC  |
| Power Factor          | • EN61000-3-2 class A<br>EN61000-3-2 class C for loads $\geq 20\%$ |
| Earth Leakage Current | • <2.5 mA at 230 VAC/50 Hz<br><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 $\mu$ 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<br>Off = TTL Logic Low or Short circuit   |

## General

|                     |  |
|---------------------|--|
| Efficiency          | • 80% typical  |
| Isolation           | • 3000 VAC Input to Output,<br>1500 VAC Input to Ground,<br>250 VDC Output to Ground |
| Switching Frequency | • 100 kHz typical for PFC,<br>30 kHz typical for PWM                                 |
| Power Density       | • 4.7 W/In <sup>3</sup> (SMQ300), 6.25 W/In <sup>3</sup> (SMQ400)                    |
| Signals             | • DC OK TTL HIGH within 100-500 ms and LOW $\geq 1$ 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<br>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 &amp; Safety

|                      |   |
|----------------------|---|
| Emissions            | • EN55022 and FCC Part 15, level B conducted                              |
| Harmonic Currents    | • EN61000-3-2 class A<br>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

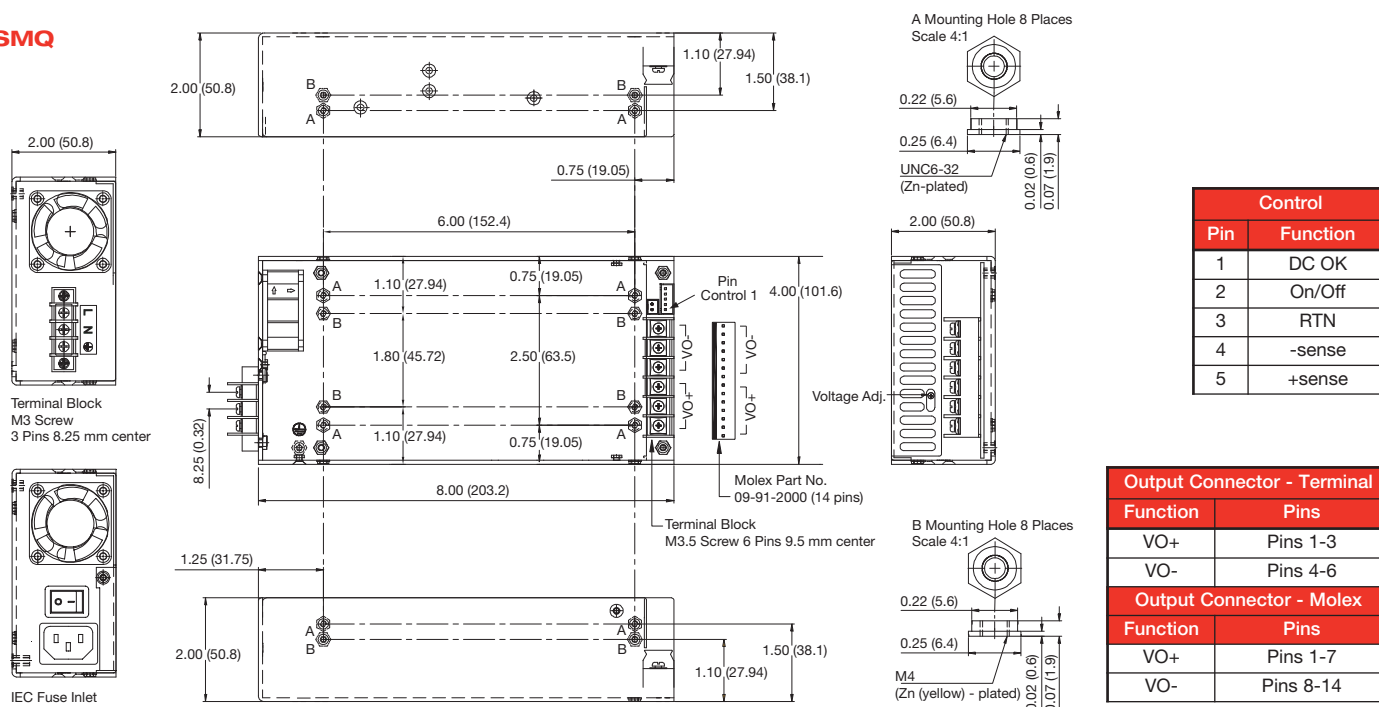
| Maximum Power | Output Voltage <sup>(1)</sup> |         | Output Current      |  | Model Number <sup>(3)</sup> |
|---------------|-------------------------------|---------|---------------------|--|-----------------------------|
|               | Preset                        | Maximum | Peak <sup>(2)</sup> |  |                             |
| 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 <sup>(4)</sup> |
|               | 24 V                          | 12.50 A | 29.16 A             |  | SMQ300PS24-C                |
|               | 27 V                          | 11.11 A | 25.92 A             |  | SMQ300PS27-C <sup>(4)</sup> |
|               | 36 V                          | 8.33 A  | 19.44 A             |  | SMQ300PS36-C <sup>(4)</sup> |
|               | 48 V                          | 6.25 A  | 14.58 A             |  | SMQ300PS48-C <sup>(4)</sup> |
| 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 <sup>(4)</sup> |
|               | 24 V                          | 16.66 A | 29.16 A             |  | SMQ400PS24-C                |
|               | 27 V                          | 14.81 A | 25.92 A             |  | SMQ400PS27-C <sup>(4)</sup> |
|               | 36 V                          | 11.11 A | 19.44 A             |  | SMQ400PS36-C <sup>(4)</sup> |
|               | 48 V                          | 8.33 A  | 14.58 A             |  | SMQ400PS48-C <sup>(4)</sup> |
|               | 54 V                          | 7.40 A  | 12.50 A             |  | SMQ400PS54-C <sup>(4)</sup> |

### 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 μs 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 <sup>(1)</sup> |
| Molex             | Molex          | N/A                       | -F <sup>(1)</sup> |

1. Available for OEM quantities, contact Sales.