

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
	24 V	12.50 A	29.16 A		SMQ300PS24-C†^
	27 V	11.11 A	25.92 A		SMQ300PS27-C
	36 V	8.33 A	19.44 A		SMQ300PS36-C
	48 V	6.25 A	14.58 A		SMQ300PS48-C†^
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
	24 V	16.66 A	29.16 A		SMQ400PS24-C†^
	27 V	14.81 A	25.92 A		SMQ400PS27-C†^
	36 V	11.11 A	19.44 A		SMQ400PS36-C†^
	48 V	8.33 A	14.58 A		SMQ400PS48-C†^
	54 V	7.40 A	12.50 A		SMQ400PS54-C

Notes

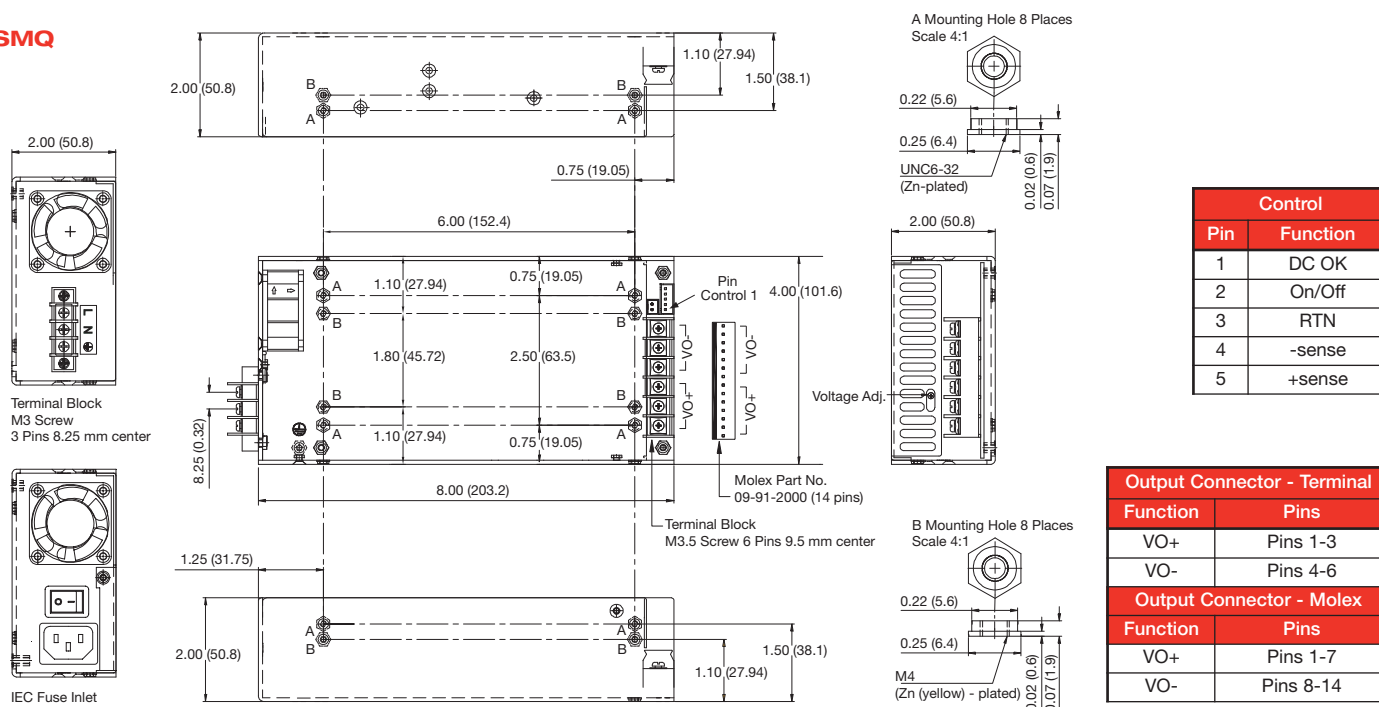
- Other voltages are available. Contact sales office for details.
- Standard models have hiccup mode current protection with a high peak load capacity. This peak can be taken for 500 μs max.
- For U-channel versions without fan/cover, change SMQ prefix to SMU (See connector options for optional connectors).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

† Available from Farnell. See pages 266-269.

^ Available from Newark. See pages 270-272.

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
Molex	Molex	N/A	-F