

SMQ Series



- High Power Density
- High Peak Load Rating
- DC OK
- Remote On/Off
- Universal Input
- Single Outputs from 12.0 V to 54.0 V
- Internal Fan

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/50Hz <1.5 mA at 115 VAC/60Hz

Output

Output Voltage	• 12 to 54 VDC - see table
Output Voltage Trim	• See table
Minimum Load	• No minimum load required
Start Up Delay	• 2.5 s typical at 120 VAC
Hold Up Time	• 20 ms minimum at 120 VAC & 80% load
Line Regulation	• $\pm 1\%$
Load Regulation	• $\pm 1\%$
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 BW
Overvoltage Protection	• 115-130% Vnom, recycle input to reset
Overcurrent Protection	• 120-150% 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	• 60 kHz typical for PFC stage, 30 kHz typical for main converter
Power Density	• 4.7 W/In ³ (SMQ300), 6.25 W/In ³ (SMQ400)
Signals	• DC OK, TTL HIGH within 100-500 ms LOW 1 ms before loss of regulation
MTBF	• 138 kHrs per MIL-HDBK-217F

Environmental

Operating Temperature	• 0 °C to +70 °C, derate linearly from 100% at +50 °C to 50% at +70 °C
Cooling	• Via internal fan
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 Hz - 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, CSA C22.2 No.60950, EN60950, CE Mark LVD

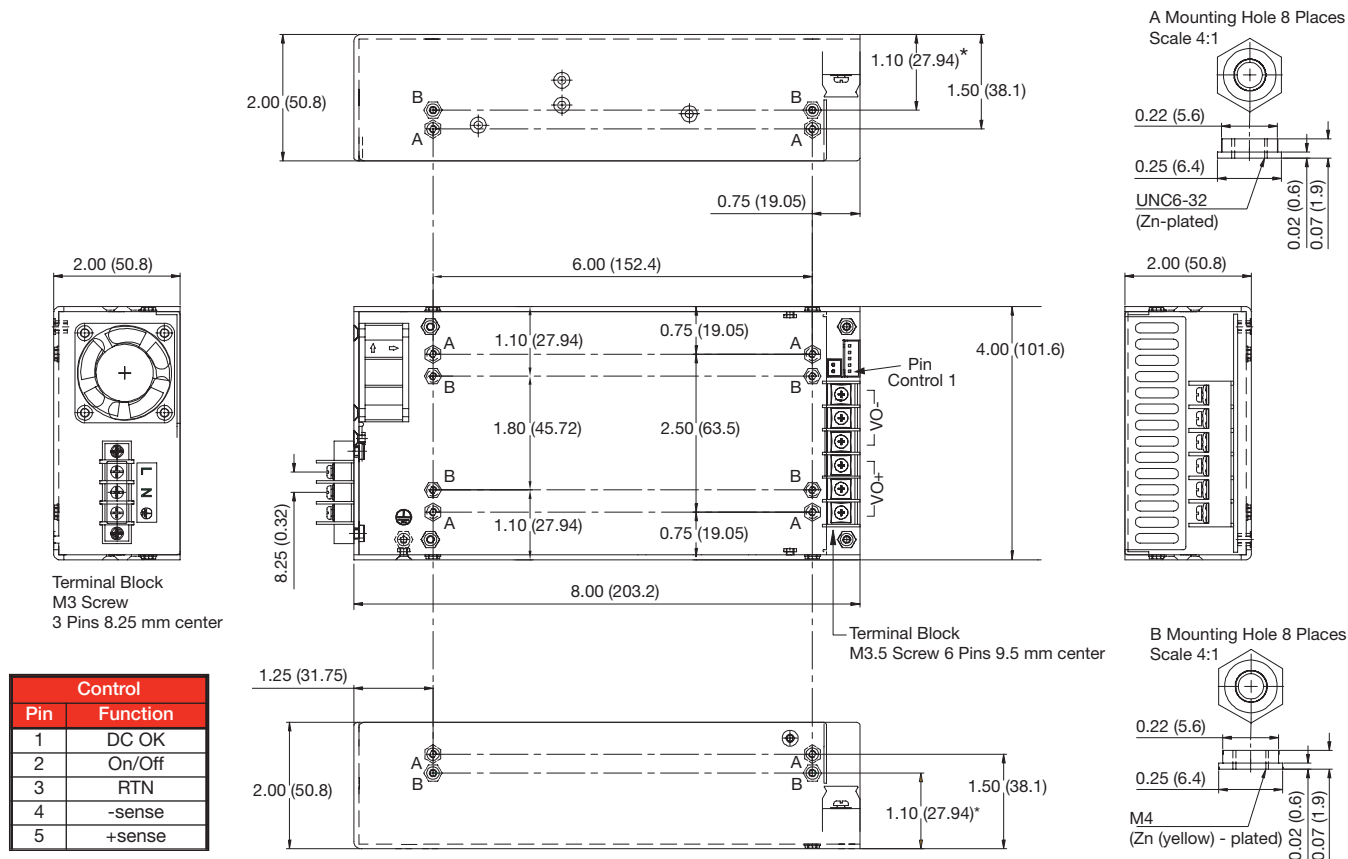
Models and Ratings

Maximum Power	Output Voltage ⁽¹⁾		Output Current		Model Number ⁽³⁾
	Preset	Range	Maximum	Peak ⁽²⁾	
300 W	12 V	12-15 V	25.00 A	46.66 A	SMQ300PS12-C†^
	15 V	12-15 V	20.00 A	46.66 A	SMQ300PS15-C†^
	18 V	16-21 V	16.66 A	33.33 A	SMQ300PS18-C
	24 V	22-30 V	12.50 A	23.33 A	SMQ300PS24-C†^
	27 V	22-30 V	11.11 A	23.33 A	SMQ300PS27-C
	36 V	31-47 V	8.33 A	17.07 A	SMQ300PS36-C
	48 V	48-56 V	6.25 A	12.72 A	SMQ300PS48-C†^
	54 V	48-56 V	5.55 A	12.72 A	SMQ300PS54-C
400 W	12 V	12-15 V	33.33 A	46.66 A	SMQ400PS12-C†^
	15 V	12-15 V	26.66 A	46.66 A	SMQ400PS15-C†^
	18 V	16-21 V	22.22 A	33.33 A	SMQ400PS18-C
	24 V	22-30 V	16.66 A	23.33 A	SMQ400PS24-C†^
	27 V	22-30 V	14.81 A	23.33 A	SMQ400PS27-C
	36 V	31-47 V	11.11 A	17.07 A	SMQ400PS36-C
	48 V	48-56 V	8.33 A	12.72 A	SMQ400PS48-C†^
	54 V	48-56 V	7.40 A	12.72 A	SMQ400PS54-C

Notes

- Other voltages are available. Contact sales office for details.
 - Standard models have foldback mode current protection with a high peak load capacity. This peak can be taken for 500 μs max.
 - For optional U-channel versions without fan/cover, change SMQ prefix to SMU, and delete suffix '-C' from model number. Requires forced air cooling at 18 CFM.
- † Available from Farnell. See pages 204-206. ^ Available from Newark. See pages 207-208.

Mechanical Details



Notes

- Dimensions in inches (mm).
 - 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: 2.42 lbs (1100 g) approx.
 - Maximum mounting screw penetration: 0.15 (4.00) from case outer surfaces.
 - Remote ON/OFF activation is 3 minutes max.
- * Dimension for SMU models is 1.20 (30.48).