

SMR Series



- Up to 900 W Peak Output Power
- Single Outputs from 12 V to 48 V
- Compact Size
- Remote On/Off
- SEMI F47 Compliant
- Optional Current Share
- 3 Year Warranty

Specification

Input

| | |
|-----------------------|---|
| Input Voltage | • 90-264 VAC (120-370 VDC) |
| Input Frequency | • 47-63 Hz |
| Input Current | • SMR600: 9 A at 90 VAC, 3.5 A at 230 VAC SMR800: 11 A at 90 VAC, 5 A at 230 VAC |
| Inrush Current | • 70 A at 230 VAC |
| Power Factor | • >0.9 |
| Earth Leakage Current | • <2.4 mA max at 264 VAC |
| Input Protection | • Fitted with a T12 A/250 V fuse |

Output

| | |
|----------------------------|---|
| Output Voltage | • See table |
| Output Voltage Trim | • $\pm 5\%$ |
| Initial Set Accuracy | • $\pm 1\%$ |
| Minimum Load | • 1% (see note 9) |
| Start Up Delay | • 1.5 s at 230 VAC |
| Start Up Rise Time | • 40 ms typical |
| Hold Up Time | • 16 ms min at 120 VAC |
| Line Regulation | • $\pm 0.5\%$, low line to high line |
| Load Regulation | • $\pm 1\%$, 1-100% load (see note 8) |
| Over/Undershoot | • 5% max |
| Transient Response | • 5% max deviation, 500 μ s recovery to within 1% for a 50% load change |
| Ripple & Noise | • 1% of nominal output voltage (see note 2) |
| Overvoltage Protection | • 110-130% recycle input to reset |
| Overtemperature Protection | • Measured internally with auto recovery |
| Overload Protection | • 110-140% with auto recovery |
| Short Circuit Protection | • Trip and restart (Hiccup mode) |
| Remote Sense | • Compensates for up to 0.5 V line drop (not available with current share) |
| Remote On/Off | • On = TTL Logic HIGH, or open circuit Off = TTL Logic LOW or short circuit |
| Current Share | • Optional single wire current share within 10% for up to 4 units (add suffix '-I' to model number) Note that this option includes output blocking diodes. Remote sense is not available with current share. |

General

| | |
|---------------------|---|
| Efficiency | • See model table |
| Isolation | • 3000 VAC Input to Output 1500 VAC Input to Ground 250 VDC Output to Ground |
| Switching Frequency | • 60 kHz PFC, 25 kHz PWM typical |
| Power Density | • SMR600: 6.16 W/In ³ , SMR800: 8.2 W/In ³ |
| Signals | • Green LED for Power On, Power Good TTL HIGH within 100-500 ms and LOW ≤ 1 ms before loss of regulation |
| Current Monitor | • 0.5 V to 3 V output denoting 0-100% output current |
| MTBF | • 150 kHrs min to MIL-HDBK-217F at 25 °C, GB |

Environmental

| | |
|-----------------------|--|
| Operating Temperature | • 0 °C to +70 °C, derates from 100% load at +50 °C to 50% load at +70 °C |
| Cooling | • Integral fan |
| Operating Humidity | • 5-90%, non-condensing |
| Storage Temperature | • -20 °C to +85 °C |
| Operating Altitude | • 3000 m |
| Vibration | • 5-50 Hz, acceleration 7.35 ms ² on X, Y and Z axis |

EMC & Safety

| | |
|----------------------|---|
| Emissions | • EN55032, level B conducted and radiated |
| 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 3 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, 3V Perf Criteria A |
| Dips & Interruptions | • EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms Perf Criteria A, B, B |
| Safety Approvals | • UL62368-1, CSA62368-1 via cUL, EN62368-1, SEMI F47 compliant (high line only) at 100% rated power output |

Models and Ratings

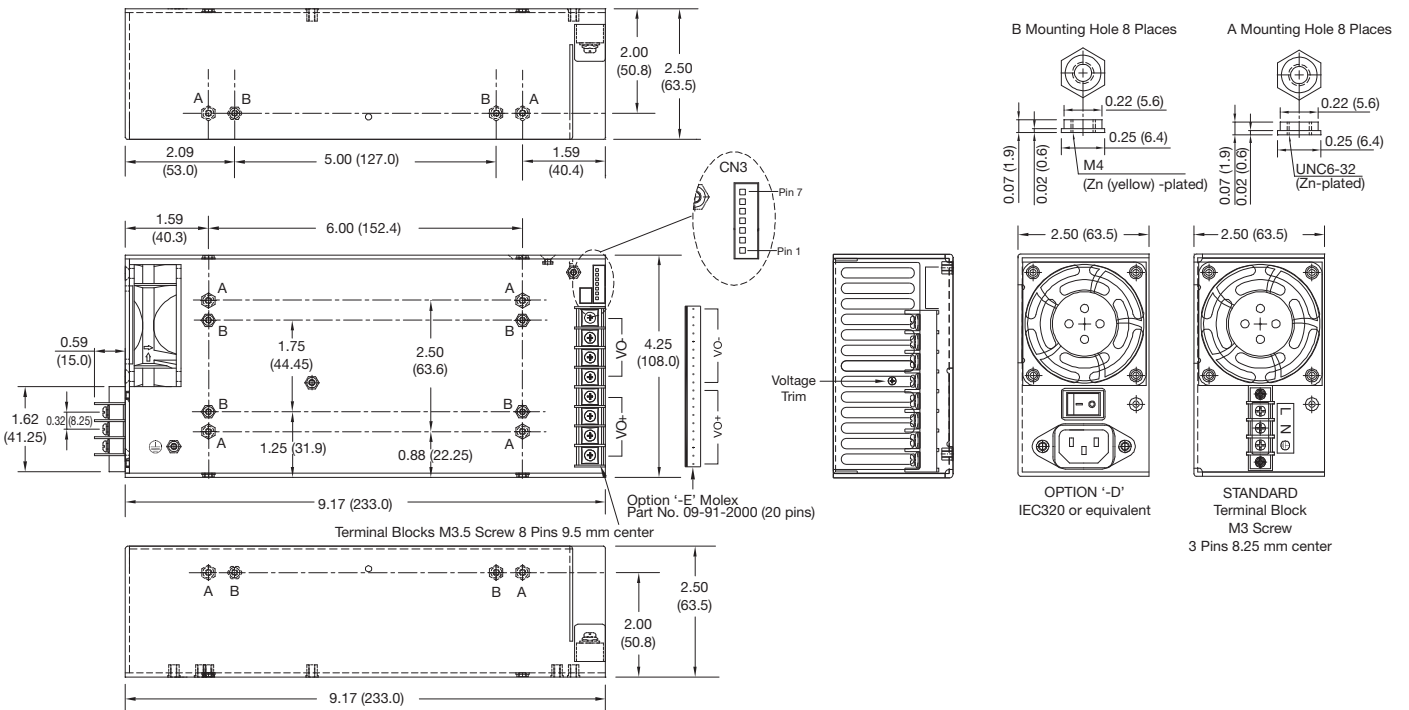
| Output Power | Output Voltage ⁽⁷⁾ | Output Current | | Ripple & Noise ⁽²⁾ | Efficiency | | Model Number |
|--------------|-------------------------------|----------------|---------------------|-------------------------------|------------|---------|--------------|
| | | Maximum | Peak ⁽¹⁾ | | 115 VAC | 230 VAC | |
| 600 W | 12 V | 50.00 A | 75.00 A | 120 mV | 79% | 83% | SMR600PS12 |
| 600 W | 24 V | 25.00 A | 37.50 A | 240 mV | 80% | 85% | SMR600PS24 |
| 600 W | 48 V | 12.50 A | 18.75 A | 480 mV | 81% | 86% | SMR600PS48 |
| 750 W | 12 V | 62.50 A | 75.00 A | 120 mV | 79% | 83% | SMR800PS12 |
| 800 W | 24 V | 33.33 A | 37.50 A | 240 mV | 80% | 85% | SMR800PS24 |
| 800 W | 48 V | 16.67 A | 18.75 A | 480 mV | 81% | 86% | SMR800PS48 |

Notes

1. Peak current can be taken for 500 μ s, average power should not exceed the maximum power.
2. Ripple & Noise is measured using 0.1 μ F ceramic and 22 μ F electrolytic capacitor; 20 MHz bandwidth.
3. Load regulation increases to 2% for 0-100% load change.
4. For Top Fan versions replace SMR with SMT.
5. For U-channel versions replace SMR with SMS.
6. For output currents >50 A please use remote sense to meet load regulation ratings.
7. Other output voltages available in OEM quantities, please contact sales.
8. Minimum load required to meet ripple and noise specification.

Mechanical Details

Covered Version



| CN3 (Signals) | |
|---------------|-----------------|
| Pin | Function |
| 1 | Current monitor |
| 2* | Current share |
| 3 | Return |
| 4 | Power good |
| 5 | Remote On/Off |
| 6* | -Remote sense |
| 7* | +Remote sense |

*If optional current share is fitted then remote sense function is excluded.

Options

| Option | SMR | SMT | SMS |
|---|-----|-----|-----|
| Current Share + output blocking diodes ⁽¹⁾ | -I | -I | -I |
| Molex Output Connector ⁽¹⁾ | -E | -E | -E |
| Molex Input Connector ⁽¹⁾ | | -F | -F |
| Molex Input Molex Output ⁽¹⁾ | | -G | -G |
| IEC320 Inlet | -D | | |
| IEC Inlet Molex Outlet ⁽¹⁾ | -F | | |

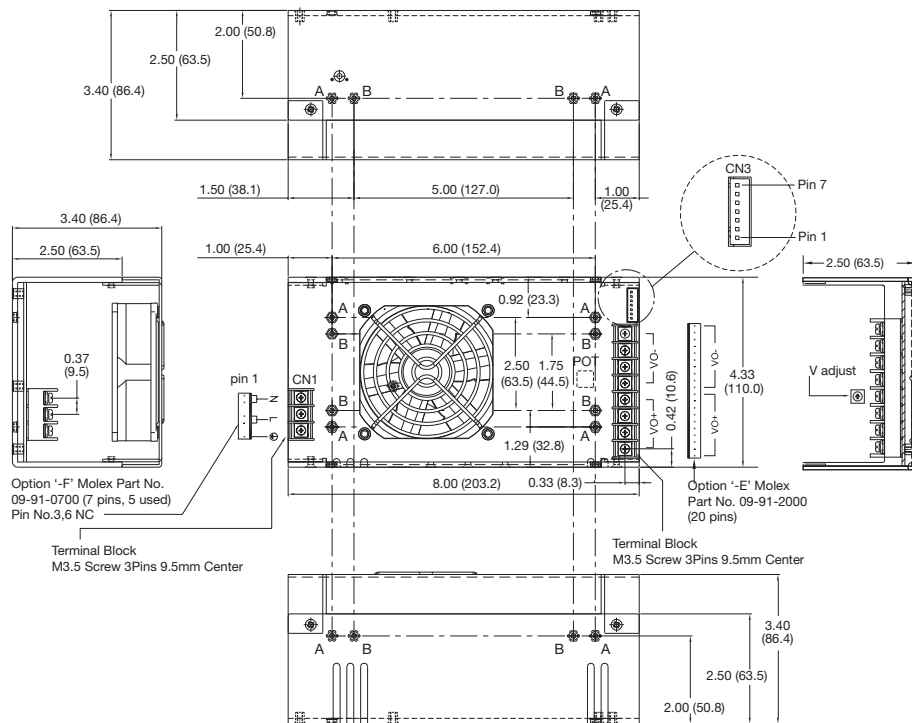
(1) Available for OEM quantities, contact Sales. For multiple option codes, place codes in alphabetical order, e.g SMR800PS12-EI

Notes

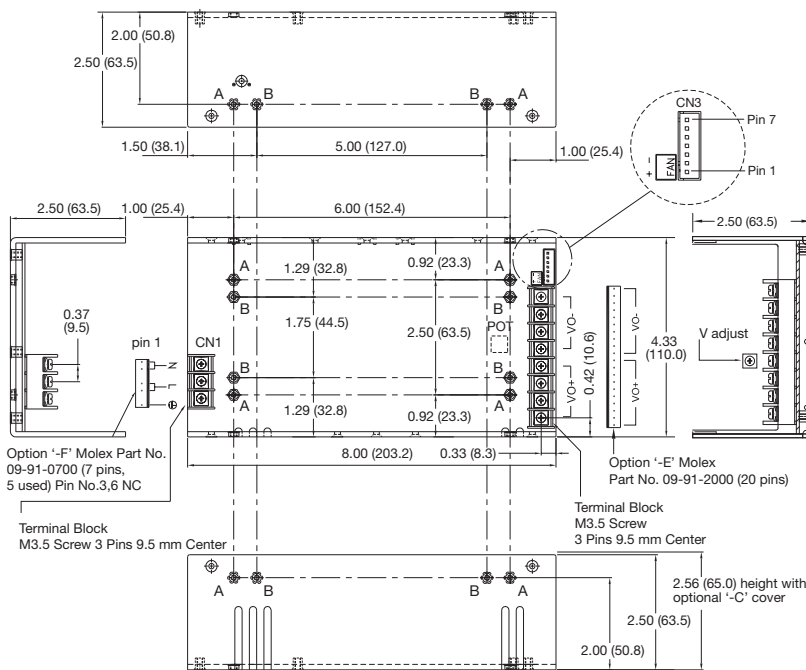
1. All dimensions are in inches (mm).
2. Weight: 3.30 lbs (1.5 kg) approx.
3. Tolerance: ± 0.012 (± 0.3)
4. Logic connector CN3 mates with: JST XHP-7 or equivalent & JST SXH-002T-P0.6 crimp terminals.
5. Maximum mounting screw penetration: 0.12 (3.0) on base & 0.25 (6.3) on each side.
6. Maximum screw terminal torque: Output: 15.7 lbs-in (1.8 Nm) Input: 7 lbs-in (0.8 Nm)



Top Fan Version - SMT



U Channel Version - SMS



| CN3 (Signals) | |
|---------------|-----------------|
| Pin | Function |
| 1 | Current monitor |
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| 5 | Remote On/Off |
| 6* | -Remote sense |
| 7* | +Remote sense |

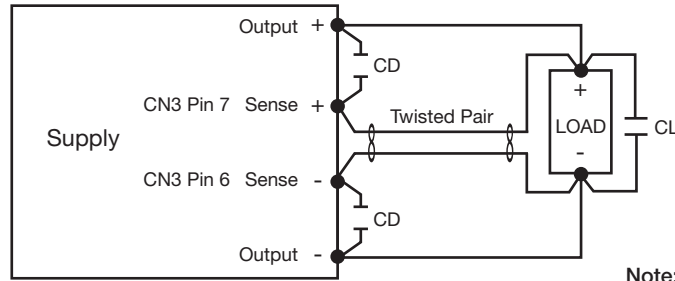
*If optional current share is fitted then remote sense function is excluded.

Notes

All dimensions are in inches (mm). Weight: 3.30 lbs (1.5 kg) approx.
 Maximum mounting screw penetration: 0.12 (3.0) on base & 0.25 (6.3) on each side.

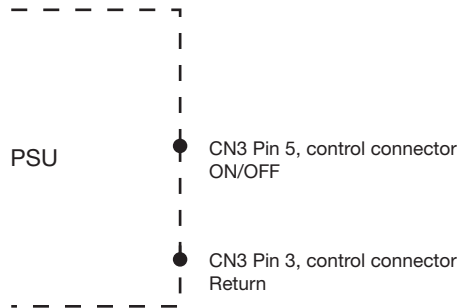
Logic connector CN3 mates with: JST XHP-7 or equivalent & JST SXH-002T-P0.6 crimp terminals.

Remote Sense



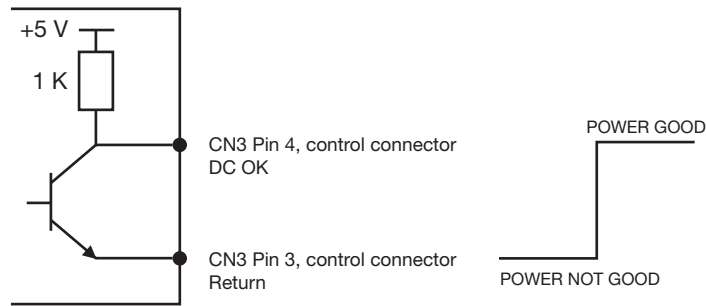
- Note:**
1. CL is 47 μ F electrolytic capacitor.
 2. CD is 0.1 μ F ceramic capacitor.

Remote On/Off

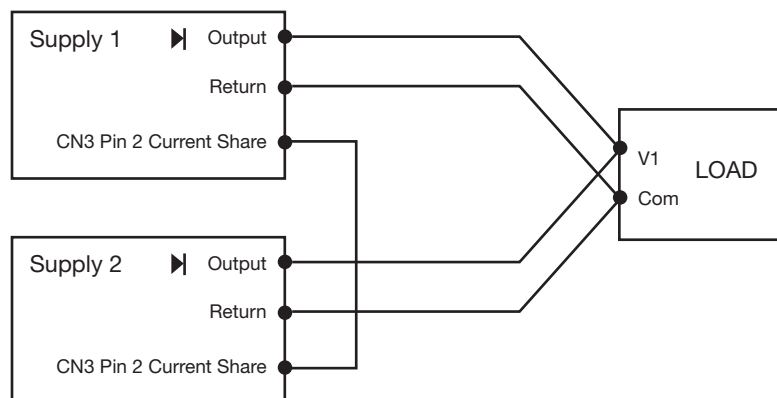


- Note:**
1. Applying <0.3 V or short between pins 5 and 3 turns the output OFF.
 2. Applying >4.5 V or open circuit between pins 5 and 3 turns output ON.

Power Good



Parallel Connection with Current Share Option



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