

# 800 Watts

## SMR Series



- Up to 900 W Peak Output Power
- Single Outputs from 12 V to 60 V
- Active PFC
- Remote On/Off
- Semi F47 Compliant
- Optional Current Share
- Optional Input & Output Connectors

### Specification

#### Input

|                       |                                  |
|-----------------------|----------------------------------|
| Input Voltage         | • 90-264 VAC (120-370 VDC)       |
| Input Frequency       | • 47-63 Hz                       |
| Input Current         | • 12 A at 90 VAC, 6 A at 230 VAC |
| Inrush Current        | • 70 A at 230 VAC                |
| Power Factor          | • 0.99 typical                   |
| Earth Leakage Current | • <2.4 mA max at 264 VAC         |
| Input Protection      | • Fitted with a T12 A/250 V fuse |

#### Output

|                            |                                                                                                                                                                                                                 |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output Voltage             | • See tables                                                                                                                                                                                                    |
| Output Voltage Trim        | • $\pm 5\%$                                                                                                                                                                                                     |
| Initial Set Accuracy       | • $\pm 1\%$                                                                                                                                                                                                     |
| Minimum Load               | • 1% to meet ripple & noise spec                                                                                                                                                                                |
| Start Up Delay             | • 1.0 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 4)                                                                                                                                                                          |
| Over/Undershoot            | • 5% max                                                                                                                                                                                                        |
| Transient Response         | • 5% max deviation, 500 $\mu$ s recovery to within 1% for a 50% load change                                                                                                                                     |
| Ripple & Noise             | • 50 mV ( $V_o \leq 5$ V), 1% ( $V_o \geq 12$ V) (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                                                                                                                                                                         |
| Remote On/Off              | • On = TTL Logic HIGH, or open circuit<br>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)<br>Note that this option includes output blocking diodes. Remote sense is not available with current share. |

#### General

|                     |                                                                                                                  |
|---------------------|------------------------------------------------------------------------------------------------------------------|
| Efficiency          | • 80% min for 12 V model<br>82% min for others models at 230 VAC                                                 |
| Isolation           | • 3000 VAC Input to Output<br>1500 VAC Input to Ground<br>250 VDC Output to Ground                               |
| Switching Frequency | • 25 kHz PWM, 60 kHz PFC                                                                                         |
| Power Density       | • 8.2 W/In <sup>3</sup>                                                                                          |
| Signals             | • Green LED for Power On, Power Good<br>TTL HIGH within 100-500 ms and LOW $\leq 1$ ms before loss of regulation |
| Current Monitor     | • 0.5 V to 3 V output denoting 0-100% output current                                                             |
| MTBF                | • 150 kHrs min per MIL-HDBK-217F                                                                                 |

#### Environmental

|                       |                                                                       |
|-----------------------|-----------------------------------------------------------------------|
| Operating Temperature | • 0 to +70 °C, derates from 100% load at +50 °C to 50% load at +70 °C |
| Cooling               | • Internal 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 <sup>2</sup> on X, Y and Z axis       |

#### EMC & Safety

|                      |                                                                                                                           |
|----------------------|---------------------------------------------------------------------------------------------------------------------------|
| Emissions            | • FCC Part 15 & EN55022 Level B conducted                                                                                 |
| Harmonic Currents    | • EN61000-3-2-3-3                                                                                                         |
| 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, level 3 Perf Criteria A                                                                                    |
| Conducted Immunity   | • EN61000-4-6, 3V Perf Criteria A                                                                                         |
| Dips & Interruptions | • EN61000-4-11 70% $U_T$ for 10 ms, 40% $U_T$ for 100 ms, <5% $U_T$ for 5000 ms<br>Perf Criteria A, B, B                  |
| Safety Approvals     | • UL60950, CSA C22.2 No. 950, EN60950-1:2001, CE Mark LVD, SEMI F47 compliant (high line only) at 100% rated power output |

## Models and Ratings

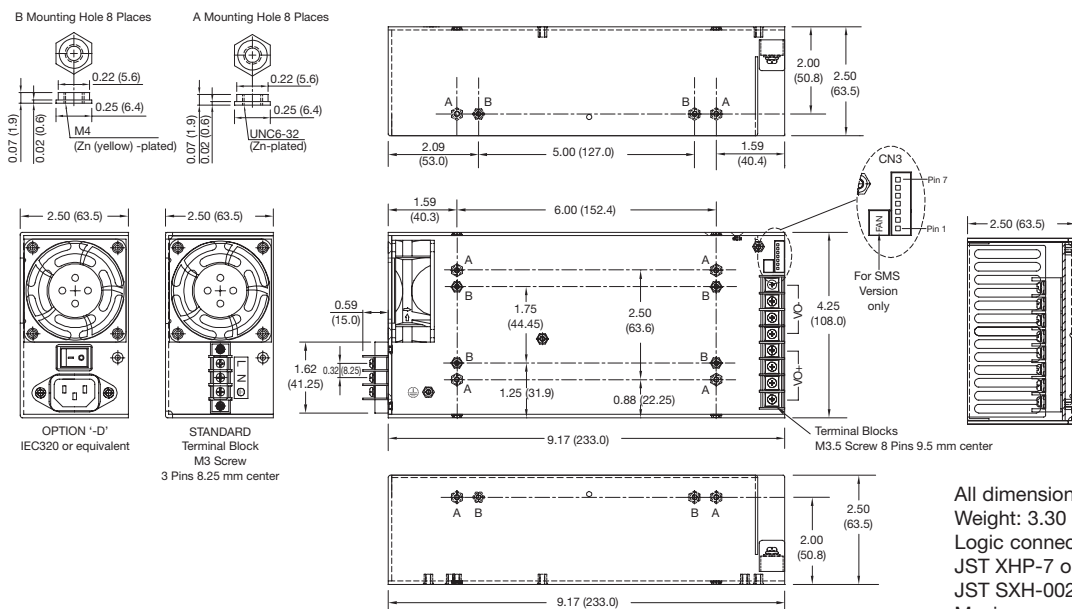
SMR Series **XP**

| Output Power | Output Voltage <sup>(3,4)</sup> | Output Current |                     | Ripple & Noise <sup>(2)</sup> | Model Number |
|--------------|---------------------------------|----------------|---------------------|-------------------------------|--------------|
|              |                                 | Maximum        | Peak <sup>(1)</sup> |                               |              |
| 750 W        | 12 V                            | 62.50 A        | 75.00 A             | 120 mV                        | SMR800PS12   |
|              | 15 V                            | 50.00 A        | 56.00 A             | 150 mV                        | SMR800PS15   |
|              | 18 V                            | 41.67 A        | 50.00 A             | 180 mV                        | SMR800PS18   |
| 800 W        | 24 V                            | 33.39 A        | 37.50 A             | 240 mV                        | SMR800PS24   |
|              | 27 V                            | 29.62 A        | 33.33 A             | 270 mV                        | SMR800PS27   |
|              | 36 V                            | 25.00 A        | 29.60 A             | 360 mV                        | SMR800PS36   |
|              | 48 V                            | 16.67 A        | 18.75 A             | 480 mV                        | SMR800PS48   |
|              | 54 V                            | 14.81 A        | 16.67 A             | 540 mV                        | SMR800PS54   |
|              | 60 V                            | 13.33 A        | 15.00 A             | 600 mV                        | SMR800PS60   |

## Notes

1. This peak can be taken for 500  $\mu$ s only, average power should not exceed the maximum power.
2. Ripple & Noise is measured using 0.1  $\mu$ F ceramic and 22  $\mu$ F electrolytic capacitor, 20 MHz bandwidth.
3. Alternative output voltages available. Consult sales.
4. Load regulation increases to 2% for 0-100% load change.

## Mechanical Details



| 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.

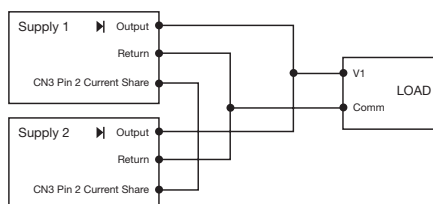
All dimensions are in inches (mm).  
 Weight: 3.30 lbs (1.5 kg) approx.  
 Logic connector CN3 mates with:  
 JST XHP-7 or equivalent &  
 JST SXH-002T-P0.6 crimp terminals.  
 Maximum mounting screw penetration:  
 0.12 (3.0) on base & 0.25 (6.3) on each side.

## Options

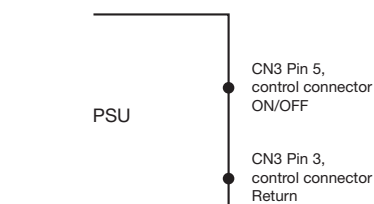
- Current share and internal oring diode add suffix '-I' to model number. Note that this option includes output blocking diodes. Remote sense is not available with current share.
- Optional IEC320 inlet add suffix '-D' to model number.
- Optional Molex output connector add suffix '-E' to model number.
- For U-Channel version replace 'SMR' in the model number with 'SMS' e.g. SMS800PS12 (note that 25 CFM cooling air is required). Dimensions are 8.00(l) x 4.33(w) x 2.56(h) (203.2 x 110.0 x 65.0).
- For top mounting fan version replace 'SMR' in the model number with 'SMT' e.g. SMT800PS12. Dimensions are 8.00(l) x 4.33(w) x 3.40(h) (203.2 x 110.0 x 86.4).
- For multiple option codes place codes in alphabetical order. e.g. SMR800PS12-DI.

## Application Notes

## Parallel Connect with Current Share Option

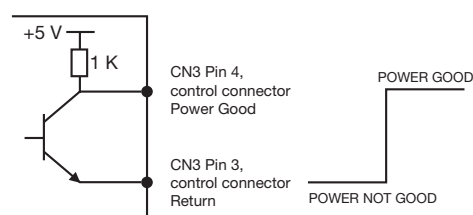


## Remote On/Off



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

## Power Good



Sink current = 6 mA  
 Source current = 4 mA