SMP Series
(600 & 1000 Watt)
Technical Specification

Rev: 06/05

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1.0 Introduction

This document defines the product specification for the SMP series of power supplies rated 600 and 1000 Watts. This product consists of two input sections and a combination of output modules.

1.1 Input

SM6 = 90-264 VAC, SM9 = 90-264 VAC (50 or 60 Hz)

1.2 Module Matrix (Output Modules):

See Module Table.

Cooling Requirements

The SM6 and SM9 are fan cooled (airflow is from input connector to output), no additional cooling is required.

1.3 Maximum Configuration Matrix

Space consideration limits the number of valid module combinations. Any combination list, or any combination below modified by removing modules can be constructed.

SM6 – 600W	SM9 – 1000W
●●●●	●●●●●●
▲●●●	▲●●●●
▲▲●	▲▲●●
■●●	▲▲▲▲
■▲	■▲▲
	■■●

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Table 1

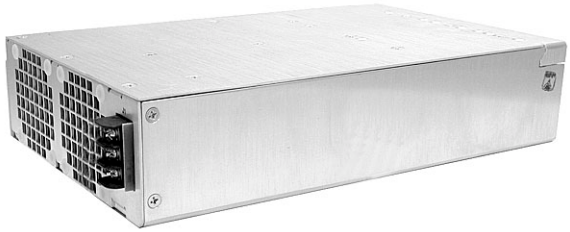
Module Number	Output Configuration	Voltage and Current	Regulation	Topology	Module Size
A2	SINGLE	3.3V@20A	1%	FORWARD	
A3	SINGLE	5V@20A	1%	FORWARD	
A4	SINGLE	12V@10A	1%	FORWARD	
A5	SINGLE	15V@8A	1%	FORWARD	
A6	SINGLE	24V@6A	1%	FORWARD	
A7	SINGLE	28V@5A	1%	FORWARD	
A8	SINGLE	36V@4A	1%	FORWARD	
A9	SINGLE	48V@3A	1%	FORWARD	
B1	SINGLE	2.0V@60A	1%	FORWARD	
B2	SINGLE	3.3V@60A	1%	FORWARD	
B3	SINGLE	5V@60A	1%	FORWARD	
B4	SINGLE	12V@25A	1%	FORWARD	
B5	SINGLE	15V@20A	1%	FORWARD	
B6	SINGLE	24V@17A	1%	FORWARD	
B7	SINGLE	28V@14.5A	1%	FORWARD	
B8	SINGLE	36V@11.1A	1%	FORWARD	
B9	SINGLE	48V@8.5A	1%	FORWARD	
C1	SINGLE	2.0V@100A	1%	FORWARD	
C2	SINGLE	3.3V@100A	1%	FORWARD	
C3	SINGLE	5V@100A	1%	FORWARD	
C6	SINGLE	24V@21A	1%	FORWARD	
C7	SINGLE	28V@18A	1%	FORWARD	
C8	SINGLE	36V@14A	1%	FORWARD	
C9	SINGLE	48V@10.5A	1%	FORWARD	
H3	SINGLE	5V@8A	1%	FLYBACK	
H4	SINGLE	12V@4A	1%	FLYBACK	
H5	SINGLE	15V@3A	1%	FLYBACK	
H6	SINGLE	24V@2A	1%	FLYBACK	
D1	DUAL	5V@10A, 12V@10A	1%	FORWARD	
D2	DUAL	12V@10A, 12V@10A	1%	FORWARD	
D3	DUAL	5V@10A, 24V@5A	1%	FORWARD	
G1	DUAL	12V@4A, 12V@4A	1%	FLYBACK	
G2	DUAL	15V@3A, 15V@3A	1%	FLYBACK	
G3	DUAL	12V@4A, 5V@8A	1%	FLYBACK	
G4	DUAL	15V@3A, 24V@2A	1%	FLYBACK	
E1	TRIPLE	5V@20A, 12V@2A, 12V@2A	Main 1%,Aux2%	NOTE 1	
E2	TRIPLE	5V@20A, 15V@ 2A, 15V@2A	Main 1%,Aux2%	NOTE 1	
E3	TRIPLE	12V@10A,15V@2A,15V@2A	Main 1%,Aux2%	NOTE 1	

Note 1 - Main Output = Forward converter
Auxiliary = Buck regulators.
Requires minimum load on main output.

1.4 Options

1.4.1 Fan and Cover

Standard end-mount fan provides adequate airflow to run at full rated power with ambient temperature in the 0-50°C range.



Cover with End mounted fans

2.0 Configurations

Table 2

Output Power	Input V AC	Chassis Type	Outputs
600 watts	90-264 V AC	SM6	1 to 9
1000 watts	90-264 V AC	SM9	1 to 12

2.1 Chassis

Table 3

Series	Size	Power Density (Watts / cubic inch)
SM6	2.5 x 5 x 11 inches (600W)	4.4
SM9	2.5 x 7 x 11 inches (1000W)	5.2

2.1.1 Chassis Construction

The chassis is constructed out of aluminum with suitable thickness and material properties for the intended application, taking into account rigidity, weight and heat dissipation requirements.

2.1.2 Chassis Finish

All Aluminum parts are finished with a clear chemical film. Copper parts are electro tin-plated.

2.2 I/O Configurations

2.2.1 Input

No.6 screw clamp terminals with .375 centers.

2.2.2 Output

Output connects vary by module as follows:

Module	Output termination	
A	No. 6 Screw	
B	M4	
C	¼" Hex Screw	(High Current)
C	M4	(Low Current)
D	Molex Plug	
E	M4	
G	No. 6 Screw	
H	No. 6 Screw	
J	M4	

4.0 Product Specifications

Value	Description
AC Input	SM6: 90-264VAC, 47-63 Hz single phase SM9: 90-264VAC, 47-63 Hz single phase
Inrush Current	Less than 40A peak
Efficiency	75% typical at nominal line.
EMC	EN55022 Class B, EN61000-4-2, 3, 4, 5 & 6 Level 3
PFC and Harmonic Correction	All AC input models compliant with EN61000-3-2.
Line Regulation AC input	Less than 0.1% for line variations from 90-264V AC Less than 0.3% for dual and triple output modules
Load Regulation	Less than 1.0% no load to full load and full load to no load, mains. Less than 2.0% for aux. outputs of dual and triple output modules (refer minimum load note below)
Cross Regulation	Less than 0.1% between single output modules. Less than 2% between dual outputs with 25% step load change on main output.
Current share	Single wire parallel current share.
Output Adjustment Range	± 5% min on all outputs
Over Current Protection, Output	140% nominal rating.
Over Voltage Protection	OVP is standard on all Main Output Modules and low voltage secondary outputs. 115-130% of nominal (G & H modules do not have OVP).
Minimum Load	No preload is required on any Single or Dual output modules. A min 1A, max 10% preload is required on main output of Triple output module in order to achieve specified regulation.
Holdup Time, AC Input	All AC Input units will maintain regulation within specifications for a period of not less than 16msec for 60Hz, (20msec for 50Hz) at full rated load from nominal 230 line voltage.
Remote Sense	All single output, main output on triple outputs and dual output “D” modules incorporate remote sense and are able to compensate for a total cable drop up to 0.5V DC. Dual output “G” modules do not have remote sense.

Table 5 (continued)

Value	Description
Isolation Ratings	Consistent with Agency Requirements.
Operating Temperature Range	0 to +70°C @ (full power to 50°C, derate linearly to 50% at 70°C).
Turn-on Voltage	Power supplies will turn on over a range of 0 to +70 degrees C.
Storage Temperature	-40 to +85°C
Operating Altitude	-350 to 7,500 feet with no de-rating
Mounting	Chassis mount via threaded M4 holes on two surfaces.
Physical Size	SM6 2.5 x 5 x 10 inches SM9 2.5 x 7 x 11 inches
Weight	SM6 3.2lbs net, 4.8lbs ship SM9 4.4lbs net, 6.6lbs ship

4.2.1 Table 6: Safety Agency Approvals

Safety Agency Approvals	UL & cUL (UL 1950, CSA 22.2 No. 950) & CE

4.2.2 Table 7: Warranty

Warranty	Two-years

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4.2.3 Table 8: Signals

Signal	H or G Modules	All other modules
AC Power Fail	No	Standard
Output Inhibit, low	No	Standard, main
DC Power Good	No	Standard, main
Current Share	No	Main output

4.3 Model Numbering System

SM _____ - _____ _____ _____ _____ _____ _____

Watt Code **Slot 1** **Slot 2** **Slot 3** **Slot 4** **Slot 5** **Slot 6**

Table 9

Power, & Input Voltage	Watt Code	Configurations
600 Watts, 90-264 VAC	6	●●●● ▲●●● ▲▲● ■●● ■▲
1000 Watts, 180-264 VAC	9	●●●●●● ▲●●●● ▲▲●● ▲▲▲▲ ■▲▲ ■■●

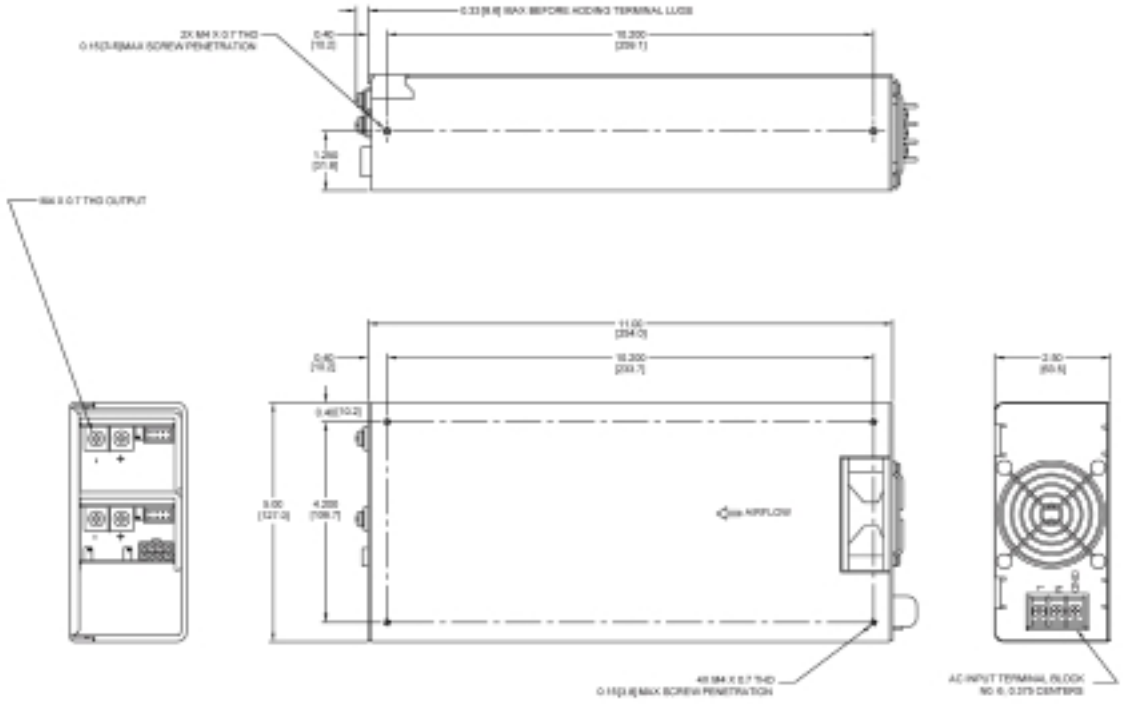

Figure 4 - SM6 I/O and Mounting

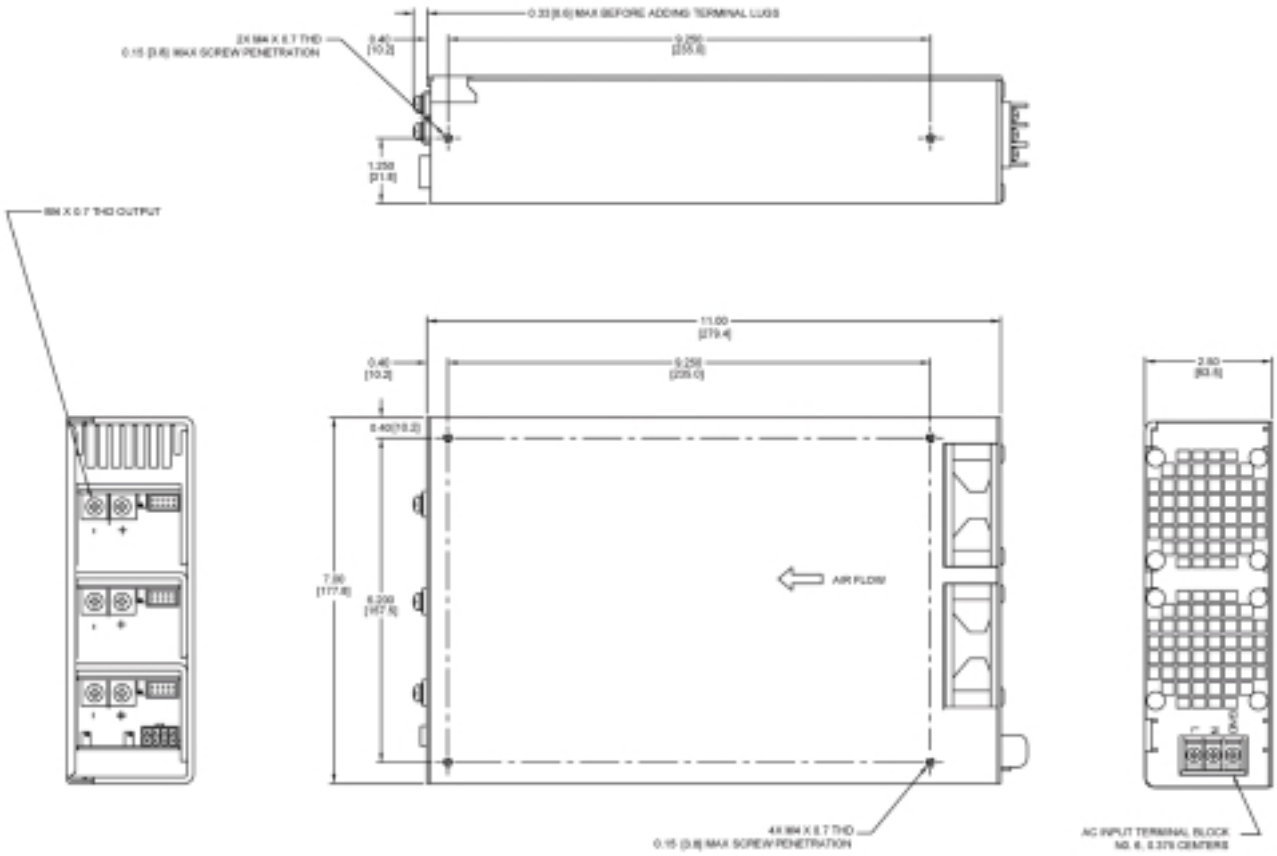

Figure 5 - SM9 I/O and Mounting