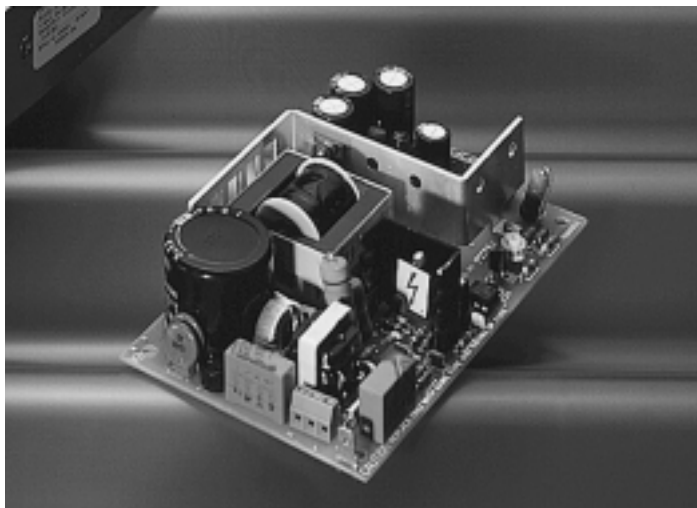


Single & Multi Output Switchers

PSR SERIES

25-100 Watts



Compact Format

•

Medical Approvals

•

85-264 V AC Universal Input

•

1 to 4 Regulated Outputs

•

Screw Terminals Available

•

Fully Isolated Outputs Available

•

Non-standard Models Available

•

Specification

(All specifications are typical at nominal input, full load and 25 °C unless otherwise stated)

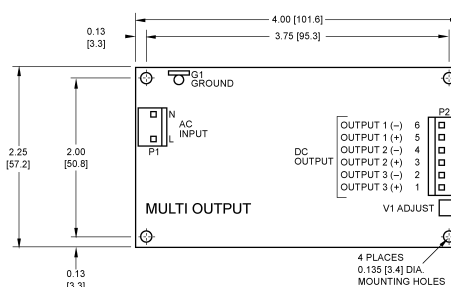
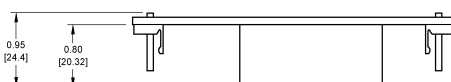
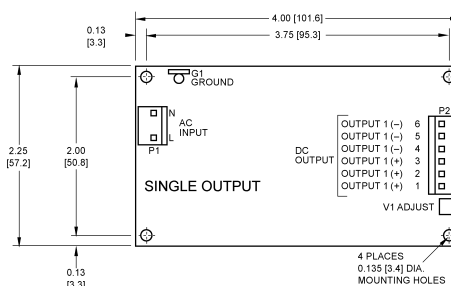
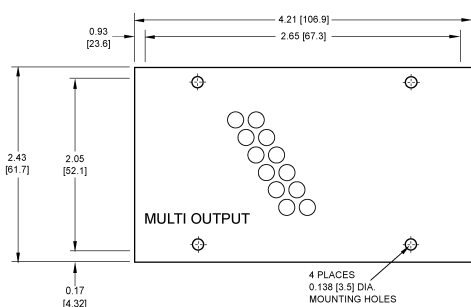
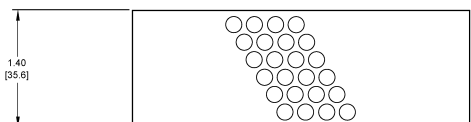
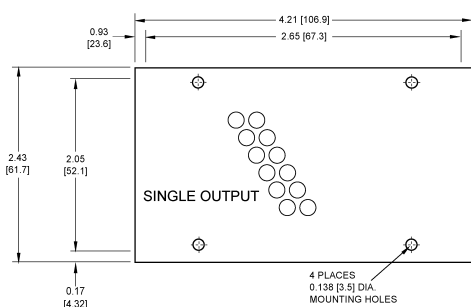
Input Voltage	• 85-264 V AC
Input Frequency	• 47-63 Hz
Inrush Current	• 30 A max. at 220 V AC
Leakage Current	• <300 μ A earth leakage, <100 μ A patient leakage
Hold Up Time	• 10 ms at 120 V AC line and full load
Output Voltage	• See Table
Output Adjustment	• $\pm 5\%$ output 1 only
Output Voltage Set Point	• $V_1 \pm 0.25\%$, $V_2 \pm 5\%$, V_3 & $V_4 \pm 3\%$
Load Regulation	• PSR40 0.5% (0-100% load change) output 1, 5.0% (30-100% load change) output 2, 0.5% outputs 3 & 4 PSR100 0.5% (0-100% load change) output 1, 5.0% (30-100% load change) output 2, 1.0% outputs 3 & 4
Output Ripple and Noise	• 1% p-p max. all outputs over 20 MHz bandwidth
Minimum Load	• See Individual Product Pages
Overload Protection	• Auto recovery
Overvoltage Protection	• Standard PSR40, optional PSR100 when fitted output 1 only, set between 110-150%
Temperature Coefficient	• 0.02%/°C
Switching Frequency	• 40 kHz typical
Efficiency	• 68% to 80% dependant on model
Operating Temperature	• 0 °C to + 70 °C, derate above 50 °C to 50% power @ 70°C
Storage Temperature	• -40 °C to + 85 °C
Isolation Voltage	• 5656 V DC primary to secondary 1 sec, 2121 V DC primary to ground 1 sec 500 V DC secondary to ground 1 sec
EMC	• PSR25 & PSR40 - EN55011/22 class B radiated & conducted PSR100 - EN55011/22 class A radiated, class B conducted
Immunity	• Electrostatic Discharge - EN61000-4-2, 8 kV air discharge, 6 kV contact discharge • Radiated Electromagnetic Field - EN61000-4-3, 3 V/m 26-1000 MHz • EFT/Bursts - EN61000-4-4 2 kV • Surges - EN61000-4-5, 1 kV differential mode, 2 kV common mode • Conducted Immunity - EN61000-4-6, 3 V, 150 KHz-80 MHz • Voltage Dips - EN61000-4-11, 30% reduction 10 ms, 60% reduction 100 ms • Voltage Interruptions - EN61000-4-11, 95% reduction 5000 ms
Safety Approvals	• EN60950, EN60601-1, UL1950, UL2601-1, CSA-C22.2 No.950-M95, CSA-C22.2 No. 601-1-M90
MTBF	• Typically 150,000 Hrs @ 25 °C & full load to MIL-HDBK 217F
Options	• See Individual Product Pages

Output Voltage & Current Ratings - 25 Watt Models

Output 1	Output 2	Output 3	Model Number
3.3 V/1.50 A	-	-	PSR25US03
5.0 V/5.00 A	-	-	PSR25US05
12.0 V/2.08 A	-	-	PSR25US12
15.0 V/4.67 A	-	-	PSR25US15
24.0 V/1.00 A	-	-	PSR25US24
48.0 V/0.52 A	-	-	PSR25US48
+5.0 V/3.00 A	+24.0 V/1.0 A	-	PSR25UM21
+5.0 V/3.00 A	+12.0 V/1.5 A	-	PSR25UM22
+5.0 V/3.00 A	-5.0 V/2.0 A	-	PSR25UM23
+12.0 V/1.50 A	-12.0 V/1.5 A	-	PSR25UM24
+15.0 V/1.50 A	-15.0 V/1.5 A	-	PSR25UM25
+5.0 V/3.00 A	+12.0 V/1.5 A	-12.0 V/0.5 A	PSR25UM31
+5.0 V/3.00 A	+15.0 V/1.5 A	-15.0 V/0.5 A	PSR25UM32

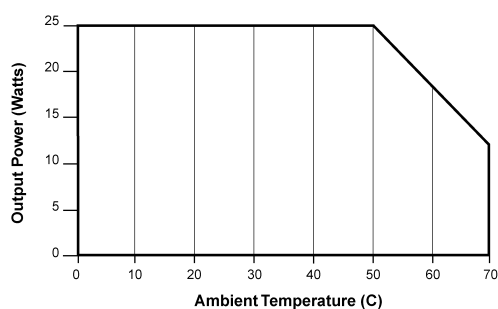
NOTES:

1. Total output power 25 W (20 W for PSR25US03).
2. Minimum load of 10% is required on output 1 to insure proper regulation of remaining outputs.

Mechanical Details - 25 Watt Models

NOTE: Cover available add suffix '-C' to model number

Maximum Output Power vs. Ambient Temperature

**AC Input Mating Connector P1**

0.156 inch friction lock header mates with Molex 09-50-3031 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal.

DC Output Mating Connector P2

0.156 inch friction lock header mates with Molex 09-50-3061 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal.

Ground Mating Connector

Ground mates with 0.187 inch fully insulated quick disconnect terminal.

Output Voltage & Current Ratings - 40 Watt Models				
Output ⁽⁴⁾ 1	Output 2	Output 3	Output 4	Model Number
3.3 V/10.00 A	-	-	-	PSR40US03-A
5.0 V/8.00 A	-	-	-	PSR40US05-A
12.0 V/3.33 A	-	-	-	PSR40US12-A
15.0 V/2.67 A	-	-	-	PSR40US15-A
24.0 V/1.67 A	-	-	-	PSR40US24-A
48.0 V/0.83 A	-	-	-	PSR40US48-A
+5.0 V/5.00 A	+24.0 V/1.5 A	-	-	PSR40UM21-A
+5.0 V/5.00 A	+12.0 V/3.0 A	-	-	PSR40UM22-A
+5.0 V/5.00 A	-5.0 V/4.0 A	-	-	PSR40UM23-A
+12.0 V/3.00 A	-12.0 V/3.0 A	-	-	PSR40UM24-A
+15.0 V/2.50 A	-15.0 V/2.0 A	-	-	PSR40UM25-A
+5.0 V/5.00 A	+12.0 V/2.0 A	-12.0 V/0.7 A	-	PSR40UM31-A
+5.0 V/5.00 A	+15.0 V/2.0 A	-15.0 V/0.7 A	-	PSR40UM32-A
+3.3 V/5.00 A	+5.0 V/3.0 A	+12.0 V/0.7 A	-12.0 V/0.7 A	PSR40UM41-A
+5.0 V/5.00 A	+3.3 V/3.0 A	+12.0 V/0.7 A	-12.0 V/0.7 A	PSR40UM42-A
+5.0 V/5.00 A	-5.0 V/3.0 A	+12.0 V/0.7 A	-12.0 V/0.7 A	PSR40UM43-A
+5.0 V/5.00 A	-5.0 V/3.0 A	+15.0 V/0.7 A	-15.0 V/0.7 A	PSR40UM44-A
+5.0 V/5.00 A	+24.0 V/1.5 A	+12.0 V/0.7 A	-12.0 V/0.7 A	PSR40UM45-A
+5.0 V/5.00 A	+24.0 V/1.5 A	+15.0 V/0.7 A	-15.0 V/0.7 A	PSR40UM46-A

EN60950 Information Technology & EN60601 Medical Safety Approvals

NOTES:

1. Isolated outputs available.
2. Minimum load of 10% required on output 1 to ensure proper regulation of the auxiliary outputs.

Mechanical Details - 40 Watt Models

SINGLE OUTPUT

Dimensions: 4.25 [107.9] (total width), 3.00 [101.6] (mounting hole spacing), 0.13 [3.3] (mounting hole diameter), 2.50 [63.5] (height), 2.25 [57.2] (height to AC input).

Pinout:

- SENSE (+) 2
- OUTPUT 1 (+) 1
- OUTPUT 1 (+) 6
- OUTPUT 1 (+) 5
- OUTPUT 1 (+) 4
- OUTPUT 1 (-) 3
- OUTPUT 1 (-) 2
- OUTPUT 1 (-) 1
- OUTPUT 1 (-) 2
- SENSE (-) 1

DC OUTPUTS: P1, N, AC INPUT, P2, GROUND, V1 ADJUST.

4 PLACES 0.135 [3.4] DIA. MOUNTING HOLES.

MULTI OUTPUT

Dimensions: 4.25 [107.9] (total width), 3.00 [101.6] (mounting hole spacing), 0.13 [3.3] (mounting hole diameter), 2.50 [63.5] (height), 2.25 [57.2] (height to AC input).

Pinout:

- OUTPUT 1 (+) 8
- OUTPUT 1 (+) 7
- OUTPUT 2 (-) 6
- OUTPUT 2 (+) 5
- OUTPUT 3 (-) 4
- OUTPUT 3 (+) 3
- OUTPUT 4 (-) 2
- OUTPUT 4 (+) 1

DC OUTPUTS: P1, N, AC INPUT, P2, GROUND, V1 ADJUST.

4 PLACES 0.135 [3.4] DIA. MOUNTING HOLES.

SINGLE & MULTI OUTPUT

Dimensions: 4.45 [113.0] (total width), 4.00 [101.6] (mounting hole spacing), 0.22 [5.6] (mounting hole diameter), 2.81 [71.4] (height), 2.25 [57.2] (height to AC input), 0.28 [7.1] (height to AC input).

4 PLACES 4-40 UNC 28 THRU MOUNTING HOLES 3/16" MAX PENETRATION DEPTH.

NOTE: Cover available add suffix '-C' to model number

AC Input Mating Connector P1
0.156 inch friction lock header mates with Molex 09-50-3031 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal.

DC Output Mating Connector P3 (Single Output)
0.156 inch friction lock header mates with Molex 09-50-3061 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal.

DC Output Mating Connector P3 (Multi Output)
0.156 inch friction lock header mates with Molex 09-50-3081 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal.

Remote Sense P4, P5
0.100 inch friction lock header mates with Molex 22-01-2027 or equivalent crimp terminal housing with Molex 08-50-0114 or equivalent crimp terminal.

Ground Mating Connector
Ground mates with 0.187 inch quick disconnect terminal.

Maximum Output Power vs. Ambient Temperature

Output Power (Watts) vs. Ambient Temperature (°C). The graph shows a constant output power of 40 Watts from 0°C to 50°C, followed by a linear decrease to 20 Watts at 70°C. The region from 0°C to 50°C is labeled 'OPTIONAL CHASSIS & COVER', and the region from 50°C to 70°C is labeled 'OPEN FRAME'.

Ambient Temperature (°C)	Output Power (Watts)
0	40
10	40
20	40
30	40
40	40
50	40
60	30
70	20

AC Input Mating Connector P1
0.156 inch friction lock header mates with Molex 09-50-3031 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal.

DC Output Mating Connector P3 (Single Output)
0.156 inch friction lock header mates with Molex 09-50-3061 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal.

DC Output Mating Connector P3 (Multi Output)
0.156 inch friction lock header mates with Molex 09-50-3081 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal.

Remote Sense P4, P5
0.100 inch friction lock header mates with Molex 22-01-2027 or equivalent crimp terminal housing with Molex 08-50-0114 or equivalent crimp terminal.

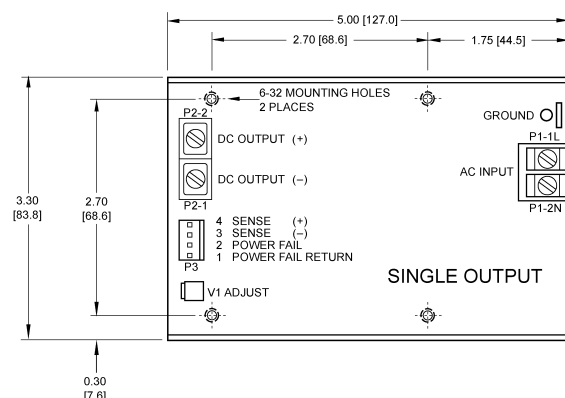
Ground Mating Connector
Ground mates with 0.187 inch quick disconnect terminal.

Output Voltage & Current Ratings - 100 Watt Models

Output ⁽⁴⁾ 1	Output 2	Output 3	Output 4	Model Number
+5.0 V/12.00 A ⁽¹⁾	+24.0 V/3.0 A	+12.0 V/2.0 A ⁽²⁾	-12.0 V/1.0 A	PSR100UM41
+5.0 V/12.00 A ⁽¹⁾	+24.0 V/3.0 A	+15.0 V/2.0 A ⁽²⁾	-15.0 V/1.0 A	PSR100UM42
+5.0 V/12.00 A ⁽¹⁾	-5.0 V/4.0 A	+12.0 V/2.0 A ⁽²⁾	-12.0 V/1.0 A	PSR100UM43
+5.0 V/12.00 A ⁽¹⁾	-5.0 V/4.0 A	+15.0 V/2.0 A ⁽²⁾	-15.0 V/1.0 A	PSR100UM44
+5.0 V/12.00 A ⁽¹⁾	+12.0 V/4.0 A	-	-12.0 V/1.0 A	PSR100UM31
+5.0 V/12.00 A ⁽¹⁾	+24.0 V/3.0 A	-	-	PSR100UM21

EN60950 Information Technology & EN60601 Medical Safety Approvals**NOTES:**

1. Rated 8 Amps max. when convection cooled only.
2. Rated 1 Amp max. when convection cooled only.
3. Isolated outputs available.
4. Minimum load of 10% required on output 1 to ensure proper regulation of the auxiliary outputs.

Mechanical Details - 100 Watt Models**AC Input Mating Connector P1 (Single Output)**

Terminal block with 4-40 inch screws on 0.325 inch centres mates with #4 spade terminals.

AC Input Mating Connector P1 (Multi Output)

0.156 inch friction lock header mates with Molex 09-50-3031 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal.

DC Output Mating Connector P2 (Single Output)

6-32 screw down terminal mates with #6 ring tongue terminal.

DC Output Mating Connector P2 (Multi Output)

0.156 inch friction lock header mates with Molex 09-50-3101 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal.

Ground Mating Connector

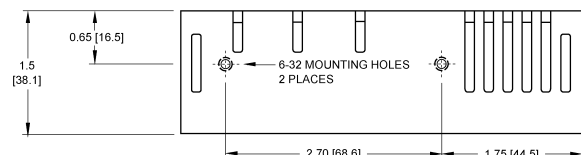
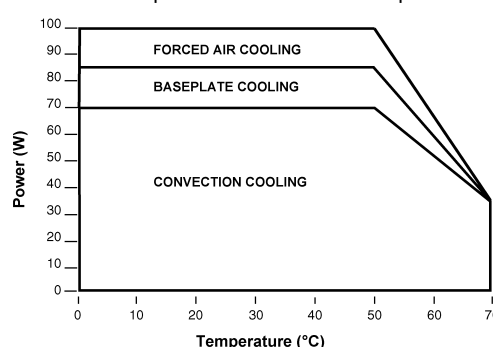
Ground mates with 0.187 inch quick disconnect terminal.

Option/ Sense Connector P3 (Single Output)

0.100 inch friction lock header mates with Molex 22-01-2047 or equivalent crimp terminal housing with Molex type 6459 or equivalent crimp terminal.

Option/ Sense Connector P3 (Multi Output)

0.100 inch friction lock header mates with Molex 22-01-2027 or equivalent crimp terminal housing with Molex type 6459 or equivalent crimp terminal.

**Maximum Output Power vs. Ambient Temperature**

NOTE: Cover available add suffix '-C' to model number
Optional cover increases height dimension to 1.75".