

AC-DC Medical

25 Watts PBM 25 Series



THE XPERTS IN POWER

Small Size 2.50" x 4.25" x 0.96"

Low Leakage Current

Medical Safety Agency Approvals

Both Line and Neutral Fused

Meets Class B, EN55011 Conducted

Fixed Switching Frequency

Specification

Input

- Input Voltage** • 85-264 VAC
- Input Frequency** • 47-63 Hz
- Input Current** • 0.7 A (rms) at 115 VAC, 0.4 A (rms) at 230 VAC
- Inrush Current** • 10 A max at 115 VAC, 25 A max at 230 VAC
- Earth Leakage Current** • 90 μ A max at 115 VAC 60 Hz, 150 μ A max at 230 VAC 50 Hz

Output

- Output Voltage** • 5.1 to 28 VDC, See Table
- Output Power** • 25/28 Watts, See Table
- Minimum Load** • No minimum for single outputs models, See Table for multi outputs models
- Start Up Delay** • 3 s max
- Start Up Rise Time** • 12 ms
- Hold up Time** • 10 ms minimum at 110 VAC
- Initial Set Accuracy** • $\pm 1\%$
- Line Regulation** • $\pm 0.5\%$ max at full load
- Total Regulation** • See Table
- Transient Response** • 4% max deviation, 500 μ s recovery time for a 25% load change
- Ripple & Noise** • $\pm 1\%$ max pk-pk (See Note 1)
- Overvoltage Protection** • Provided on output 1 only; set at 112-132% of its nominal output voltage
- Overcurrent Protection** • 125-200% with auto recovery
- Short Circuit Protection** • Trip & restart with auto recovery
- Temperature Coefficient** • $\pm 0.04\%/^{\circ}\text{C}$

General

- Efficiency** • 68% minimum for 5 V & multi output models, 70% minimum all others
- Isolation** • 4000 VAC Input to Output, 1500 VAC Input to Ground, 500 VAC Output to Ground
- Switching Frequency** • 42 KHz ± 5 KHz
- MTBF** • 500,000 hrs per min MIL-HDBK-217F
- Size** • 4.25 x 2.50 x 0.96", 107.95 x 63.50 x 24.38 mm
- Weight** • Single output models 163 g, Multi output models 175 g

Environmental

- Operating Temperature** • 0 $^{\circ}\text{C}$ to +70 $^{\circ}\text{C}$, derate linearly from 100% load at +50 $^{\circ}\text{C}$ to 50% load at +70 $^{\circ}\text{C}$
- Storage Temperature** • -40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$
- Cooling** • Convection cooled
- Relative Humidity** • 5-95%, non-condensing
- Operating Altitude** • 3000m
- Shock** • 20 G in 3 directions, 3 times each
- Vibration** • 0.15mm over 10-55Hz and 1 octave/min. 3 axes for 30 min

EMC & Safety

- EMC** • EN55011 (CISPR11) Class B & FCC Class B conducted
- ESD** • EN61000-4-2 Level 2 Perf Criteria A
- Radiated Immunity** • EN61000-4-3 3 V/m Perf Criteria A
- EFT/Burst** • EN61000-4-4 Level 3 Perf Criteria A
- Surge** • EN61000-4-5 Level 3 Perf Criteria A
- Safety Approvals** • UL2601-1, CSA C22.2 No 601.1, EN60601-1, IEC 601-1



OUTPUT VOLTAGE & CURRENT RATINGS

PBM 25

Output Power Maximum	Output 1				Output 2				Output 3				Model Number
	Vnom	Imin	I _{max}	Reg. ⁽²⁾	Vnom	Imin	I _{max}	Reg. ⁽²⁾	Vnom	Imin	I _{max}	Reg. ⁽²⁾	
28 W	5.1 V	0.0 A	5.5 A	2%									PBM25US05
28 W	12.0 V	0.0 A	2.3 A	1%									PBM25US12*
28 W	15.0 V	0.0 A	1.9 A	1%									PBM25US15*
28 W	24.0 V	0.0 A	1.2 A	1%									PBM25US24*
28 W	28.0 V	0.0 A	1.0 A	1%									PBM25US28*
25 W	5.1 V	0.4 A	2.5 A	3%	+12 V	0.2 A	1.5 A	5%					PBM25UD01*
25 W	5.1 V	0.4 A	2.5 A	3%	+24 V	0.1 A	0.8 A	5%					PBM25UD02*
25 W	5.1 V	0.4 A	2.5 A	3%	+12 V	0.2 A	1.5 A	5%	-12 V	0.05 A	0.2 A	4%	PBM25UT01*
25 W	5.1 V	0.4 A	2.5 A	3%	+15 V	0.1 A	1.0 A	5%	-15 V	0.05 A	0.2 A	4%	PBM25UT02*
25 W	5.1 V	0.4 A	2.5 A	3%	+24 V	0.1 A	0.8 A	5%	-12 V	0.05 A	0.2 A	4%	PBM25UT03*

Notes

1. Ripple and noise measured with 20 MHz bandwidth with 10 µF electrolytic in parallel with 0.1 µF ceramic.
 2. Regulation includes line and load regulation and set point accuracy. All multiple output models may be operated at no-load, but output regulation will increase to 10% on outputs V2 & V3.
- * Also available from Farnell InOne, see pages 350 & 351.

Mechanical Details - Single Output Models

0.144 (3.66 Dia. Mounting Hole (4 Places))

P1 AC Input (N, L)

GND

P2 DC Output (1, 2, 3, 4)

Dimensions: 0.13 (3.18), 4.00 (101.60), 4.25 (107.95), 0.13 (3.18), 2.55 (57.15), 2.50 (63.5), 0.86 (21.84), 0.96 (24.38)

PIN CONNECTIONS	
Pin	Function
1	Return
2	Return
3	Output 1
4	Output 1

Notes:

1. Dimensions shown in inches (mm).
2. Tolerance 0.03 (0.76) maximum.
3. Input connector P1 mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal.
4. Output connector P2 mates with Molex housing 09-50-3041 and Molex 2878 series crimp terminal.
5. Weight 163 g.
6. Covers available, order part number PBM25 COVER*, or add suffix '-C' to have cover fitted (78.8 x 12.0 x 34.8 mm).
7. Mating connector kit available, order part number PBM25 CONKT-S*.

Mechanical Details - Multi Output Models

0.144 (3.66 Dia. Mounting Hole (4 Places))

P1 AC Input (N, L)

GND

P2 DC Output (1, 2, 3, 4, 5, 6)

Dimensions: 0.13 (3.18), 4.00 (101.60), 4.25 (107.95), 0.13 (3.18), 2.55 (57.15), 2.50 (63.5), 0.86 (21.84), 0.96 (24.38)

PIN CONNECTIONS		
Pin	Dual Output	Triple Output
1	Output 2	Output 2
2	Output 1	Output 1
3	Output 1	Output 1
4	Common Return	Common Return
5	Common Return	Common Return
6	No Connection	Output 3

Notes:

1. Dimensions shown in inches (mm).
2. Tolerance 0.03 (0.76) maximum.
3. Input connector P1 mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal.
4. Output connector P2 mates with Molex housing 09-50-3061 and Molex 2878 series crimp terminal.
5. Weight 175 g.
6. Covers available, order part number PBM25 COVER*, or add suffix '-C' to have cover fitted (78.8 x 120.0 x 34.8 mm).
7. Mating connector kit available, order part number PBM25 CONKT-D/T*.