



MSM40A/B/D Series

40 Watt Triple Output Medical Open Frame Power Supply

- High Efficiency
- Wide Range AC Input
- Fully Regulated DC Output
- Lifetime Expectation >5 years
- Hold-up Time >20ms at full load
- Outputs Floating
- Safety Approval - EN60601-1 Class I

Elpac Part Number	V1	I1	V2	I2	V3	I3	Total Regulation	Typical Efficiency
MSM40D	5.1V	4.0A	24.0V	1.0A	-12.0V	0.4A	±5%	74%
MSM40B	5.1V	4.0A	15.0V	2.0A	-15.0V	0.4A	±5%	74%
MSM40A	5.1V	4.0A	12.0V	2.0A	-12.0V	0.4A	±5%	73%

Input

Input Voltage	85 - 264VAC 100 - 240VAC Nominal
Input Frequency	50 - 60Hz
Input Current	<1.3A rms
Inrush Current	<37A at 230VAC cold start
Zero Load Power Consumption	<7.0W
Earth Leakage Current (Typical)	<25μA @ 132VAC @ 60Hz <40μA @ 264VAC @ 60Hz

Output

Output Voltage	See Table
Total Regulation	+/-5% (each output)
Minimum Load	For V2 regulation, V1 current must be min 25% of V2, and <5x V2 current. For V3 regulation, min. load of 0.4A on V1
Start-Up Delay	<750ms
Hold-Up Time	>20ms at full load, 115VAC
Ripple & Noise	<1% pk-pk **
Over Voltage Protection	112-136%
Over Temperature Protection	Active - Recoverable
Over Current Protection	120 - 180%
Short Circuit Protection	Pulsing Mode Auto Recovery

General

Efficiency	Avg Efficiency 73.6% @ 115VAC; 74% @ 230VAC
MTBF	min. 200,000 hours demonstrated
Size	5.0
Weight	0.55 lbs (.25 kg)
Power Density	2.0W/in3

Environmental

Operating Temperature	0 – 50°C (Full load to 50°C, derate linearly to 50% load at 70°C)
Storage Temperature	-40°C to +85°C
Relative Humidity	5-95%, non-condensing
Cooling	Natural Convection
Vibration	All units production tested to 19.6m/s2

EMC & Safety

Emissions	FCC class B, CISPR11 class B EN61000-3-2, -3
Immunity	EN61000-4-2, -3, -4, -5, -6, -8, -11
Certified by UL to the following:	cRUus
	UL 60601-1
	CAN/CSA-22.2 No.601.1-M90
	CB per IEC60601-1
	CE marked to LVD

Input Configuration

Connector (P1)	AMP p/n 640445-3
Mating Connector	AMP p/n 640250-3 or equivalent
GND	0.25" Faston Tab

Output Configuration

Connector (PSU Side)	AMP p/n 640445-6 (or equivalent)
Mating Connector	AMP p/n 640250-6 (or equivalent)

Input Pin Assignments (P1)

Pin 1	AC Line
Pin 2	<not assembled>
Pin 3	AC Neutral

Output Pin Assignments (P2)

Pin 1	V2
Pin 2	V1
Pin 3	V1
Pin 4	Com
Pin 5	Com
Pin 6	V3

