



FEATURES

- Medical 60601-1(BF) Safety Approvals
- Class I Construction
- Full Load Convection Cooled Operation Up To 40°C
- High Efficiency - 93% Typical At 230 VAC, Full Load
- Remote On/Off, AC OK & DC OK
- 5VSDB @ 500mA Output
- Universal AC Input With Active PFC
- EN55011 / FCC Part 15J Class B Cond. Emissions
- 3 Year Warranty

INPUT SPECIFICATIONS

Input Voltage	90-264 VAC (Universal)
Input Frequency	47-63Hz
Input Current	5.6A _{RMS} at 115VAC / 2.8A _{RMS} at 230VAC
Inrush Current	<10A @ 240 VAC, Cold Start
Power Factor	>0.97
Earth Leakage Current	<250µA @ 264VAC
Patient Leakage Current	<100µA @ 264VAC
Input Protection	Internal 8A / 250V Fuse (Line & Neutral)

OUTPUT SPECIFICATIONS

Output Voltage	See Table
Line Regulation	±0.5%
Load Regulation	±2%
Minimum Load	None
Transient Response	±5%, 50% step-load, slew rate 1A/µS
Ripple / Noise	0.5% pk-pk typical
Turn-On Delay	3 seconds max @ 115VAC
Hold-Up Time	>20ms at 115VAC Input (Full Load)
Over-Voltage	110-140% Latching
Over-Load	110-140% (Hiccup Mode, Auto-Recovery)
Short Circuit	Hiccup Mode
Over-Temperature	Auto-Recovery

STATUS & CONTROL

Remote On/Off	Power LED to Shut Down Main Output (Isolated Optocoupler)
AC OK	TTL Low = Failure, 5ms Warning Time
DC OK	TTL High = OK
Standby Output	5VSDB @ 500mA
Fan Output	12VFAN@400mA

GENERAL SPECIFICATIONS

Efficiency	90%/93% typical at 115/230 VAC, full load
Isolation	Input to Output 4000 VAC ,2xMOPP Input to Ground 1500 VAC ,1xMOPP Output to Ground 1500 VAC ,1xMOPP
MTBF	300K Hours, Mil-217F at 25 °C, full load
Weight	930g

ENVIRONMENTAL SPECIFICATIONS

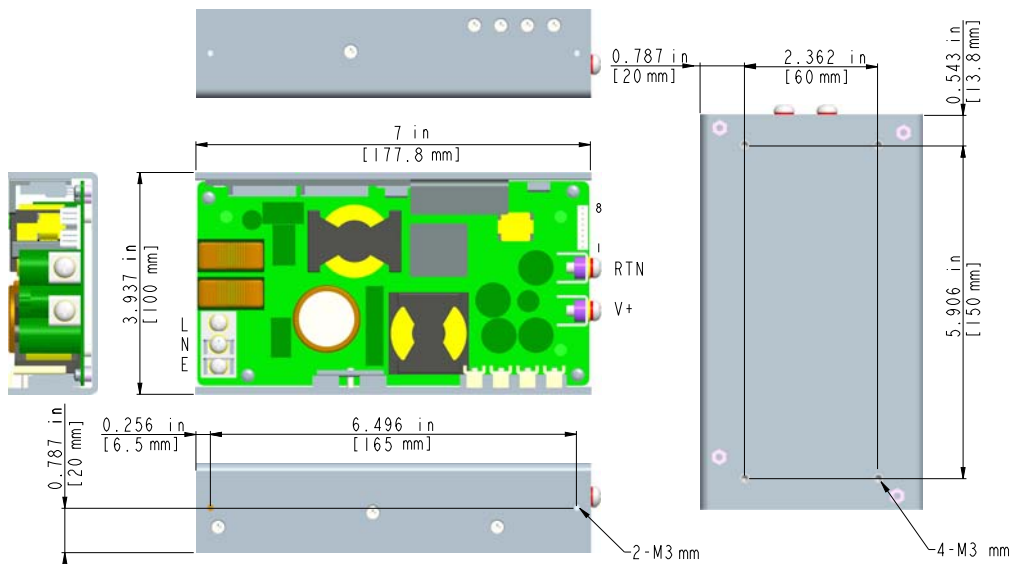
Operating Temperature	-10°C ~ +40°C (convection cooled)
Derating	2.5%/°C > 40°C, up to 50°C max
Storage Temperature	-40°C ~ +80°C
Operating Humidity	5~95% (non-condensing)
Operating Altitude	3000M (max)
Shock	294m/s ² , 10ms on 3 axes
Vibration	10-500Hz, 19.6 m/s ² (2G), 20mins on 3 axes

EMC & SAFETY

Emissions	EN55011, FCC Part J15, Class B, Conducted EN55011, FCC Part J15, Class B, Radiated
Harmonic Current	EN61000-3-2 Class A
Voltage Flicker	EN61000-3-3
ESD	EN61000-4-2, 8kV contact, 15kV Air Discharge
EFT/Burst	EN61000-4-4, Level 3, Criterion A
Surge	EN61000-4-5, Installation Class3, Criterion A
Conducted Immunity	EN61000-4-6 ,3V _{RMS} (6V _{RMS} ,ISM band), Criterion A
Radiated Immunity	EN61000-4-3, 3V/m(6V/m,ISM band), Criterion A
Proximity Fields Immunity	EN61000-4-3 (Table 9 in IEC60601-1-2 4 th ED)
Magnetic Field	EN61000-4-8, 30A/m, Criterion A
Dips & Interruptions	EN61000-4-11, 0% 0.5 cycles, 1 cycles; 70% 25/30 cycles; 0% 300cycles; Criterion A/B/C
Safety Approvals	IEC/EN 60601-1, 3rd Edition ANSI / AAMI ES60601-1 CSA C22.2 No 60601-1 CE Mark

MODELS	MAIN OUTPUT VOLTAGE	OUTPUT CURRENT	PEAK CURRENT	RIPPLE & NOISE (MAX)	STANDBY OUTPUT	MAX TOTAL REGULATION
MP400-12	12V	30.0A	33.3A	60mV	5VSDB @ 500mA	±2%
MP400-15	15V	26.7A	30.0A	75mV	5VSDB @ 500mA	±2%
MP400-18	18V	22.2A	25.0A	90mV	5VSDB @ 500mA	±2%
MP400-24	24V	16.7A	18.8A	120mV	5VSDB @ 500mA	±2%
MP400-28	28V	14.3A	16.1A	140mV	5VSDB @ 500mA	±2%
MP400-36	36V	11.1A	12.5A	180mV	5VSDB @ 500mA	±2%
MP400-48	48V	8.33A	9.4A	240mV	5VSDB @ 500mA	±2%

OUTLINE DRAWING



AC INPUT

Terminal Blocks

L	Line
E	Earth Ground
N	Neutral

DC OUTPUT

Terminal Blocks

+V	Output VDC
RTN	Return

FAN OUTPUT

Terminal Blocks

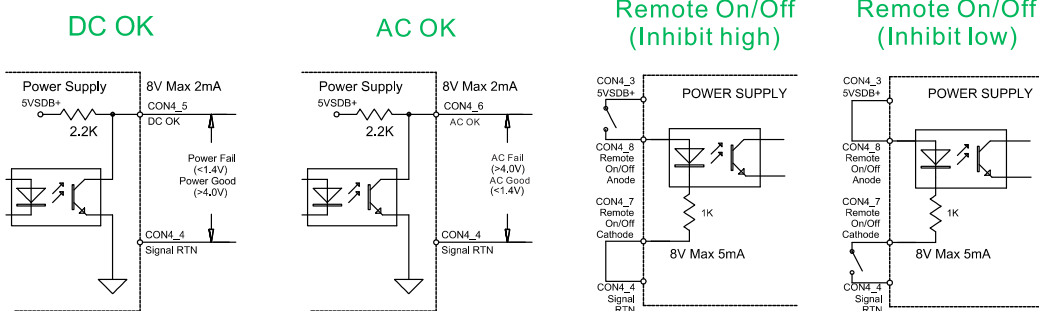
VFAN +	Output VFAN
VFAN -	VFAN Return

SIGNAL CONNECTOR

AMP P/N 640456-8

1	+Sense
2	-Sense
3	5VSDB
4	5VSDB Return
5	DC OK
6	AC OK
7	Remote on/off (Cathode)
8	Remote on/off (Anode)

OUTLINE DRAWING



SIGNALS

DC OK TTL output, Main output ok 4V-5.5V, main output fail 0V-1.4V.

AC OK TTL output, goes high 5ms before loss of DC main output.

Remote On/Off Isolated optocoupler diode powered shuts down main output.

NOTES