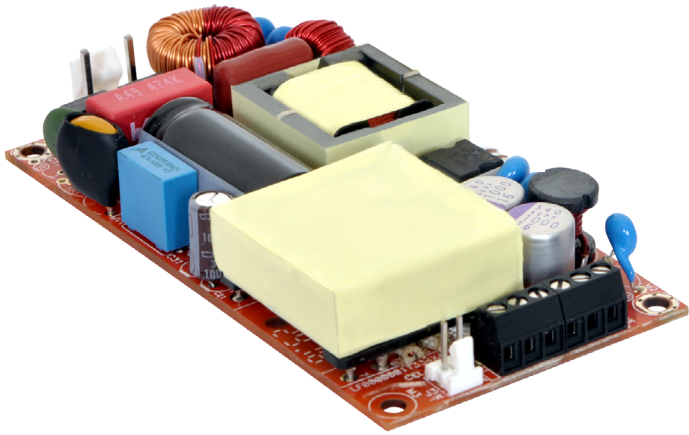


180 Watt Medical



Features

- 4 x 2 x 0.75 Inches Form factor
- 180 Watts with Forced Air Cooling
- Approval to EN60601 3rd Edition
- Efficiencies upto 92%
- -40 to 70 degree operating temperature*
- Dual fusing
- 12V / 0.5A Fan Output, Thermal Shut-Down feature
- 3.37m Hours, Telcordia -SR332-issue 3 MTBF
- Standby Power < 0.5W
- Medical (BF) Safety Approvals

Electrical Specifications

Input Voltage	80-264 VAC/390 VDC, Universal (Derate from 100% at 100V AC to 77% at 80V AC)	
Input Frequency	47-63 Hz	
Input Current	115 VAC: 2.2 A max.	230 VAC: 1.1 A max.
No Load Power	<0.5W typical for MULP180-1XXX and <0.85W typical for MULP180-1XXX-PGPF	
Inrush Current	115 VAC – 25 A, 230 VAC – 45 A, 264 VAC – 75 A	
Leakage Current	300 uA Typical, (N.A. For Class II Option)	Touch current <100uA
Efficiency	92%(48V,58V), 90%(24V,30V), 88%(12V,15V)	
Hold-up Time	at 180W:10 ms ; 120W: 16 ms	
Power Factor	>0.95@115 VAC and 0.9@230 VAC	
Output Power	180W with 13 CFM, upto 120W Convection	
Line Regulation	+/-0.5%	
Load Regulation	+/-1%	
Transient Response	25% step load change, at 0.1A/uS slew rate, 50% duty cycle, 50Hz=4% , recovery time < 5 ms	
Rise Time	55ms typical	
Set Point Tolerance	+/-1%	
Over Current Protection	>110%	
Over Voltage Protection	110 to 140%	
Short Circuit Protection	Hiccup mode	
Switching Frequency	PFC – 70 to 130 KHz ,PWM – 50-80 KHz	
Operating Temperature ⁷	-40 to +70°C	
Storage Temperature	-40 to +85°C	
Relative Humidity	5% to 95%, noncondensing	
Altitude	Operating: 16,000 ft.; Nonoperating: 40,000 ft.	
MTBF	3.37m Hours, Telcordia -SR332-issue 3	
Isolation Voltage	Input to Output – 4000 VAC medical applications. Input to GND - 1500 VAC (Not Applicable For Class II Option) Output to GND- 1500VAC for type BF , 500 VAC for type B (Not Applicable For Class II Option)	
Cooling	180W with 13 CFM forced air cooling ⁶ (refer Mechanical Drawing) upto 120 W with natural convection cooling ⁶ (refer Derating Curve)	

Model Number	Description	Voltage	Max. Load (Convection) (112.5W) @50°C	Max. Load (Convection) (120W) @40°C	Max. Load (13 CFM)	Min. Load	Ripple ¹	Signal
MULP180-1012	with Screw Terminal	12 V	9.37A	10.00A	15.00A	0.0 A	2%	N.A
MULP180-1312	with Molex Connector	12 V	9.37A	10.00A	15.00A	0.0 A	2%	N.A
MULP180-1015	with Screw Terminal	15 V	7.50A	8.00A	12.00A	0.0 A	2%	N.A
MULP180-1315	with Molex Connector	15 V	7.50A	8.00A	12.00A	0.0 A	2%	N.A
MULP180-1024	with Screw Terminal	24 V	4.68A	5.00A	7.50A	0.0 A	1%	N.A
MULP180-1324	with Molex Connector	24 V	4.68A	5.00A	7.50A	0.0 A	1%	N.A
MULP180-1030	with Screw Terminal	30 V	3.75A	4.00A	6.00A	0.0 A	1%	N.A
MULP180-1330	with Molex Connector	30 V	3.75A	4.00A	6.00A	0.0 A	1%	N.A
MULP180-1048	with Screw Terminal	48 V	2.34A	2.50A	3.75A	0.0 A	1%	N.A
MULP180-1348	with Molex Connector	48 V	2.34A	2.50A	3.75A	0.0 A	1%	N.A
MULP180-1058	with Screw Terminal	58 V	1.94A	2.07A	3.10A	0.0 A	1%	N.A
MULP180-1358	with Molex Connector	58 V	1.94A	2.07A	3.10A	0.0 A	1%	N.A
ULP180-CK metal cover kit accessory								
MULP180-0012	with Screw Terminal	12 V	9.37A	10.00A	15.00A	0.0 A	2%	PG & AC PF
MULP180-0312	with Molex Connector	12 V	9.37A	10.00A	15.00A	0.0 A	2%	PG & AC PF
MULP180-0015	with Screw Terminal	15 V	7.50A	8.00A	12.00A	0.0 A	2%	PG & AC PF
MULP180-0315	with Molex Connector	15 V	7.50A	8.00A	12.00A	0.0 A	2%	PG & AC PF
MULP180-0024	with Screw Terminal	24 V	4.68A	5.00A	7.50A	0.0 A	1%	PG & AC PF
MULP180-0324	with Molex Connector	24 V	4.68A	5.00A	7.50A	0.0 A	1%	PG & AC PF
MULP180-0030	with Screw Terminal	30 V	3.75A	4.00A	6.00A	0.0 A	1%	PG & AC PF
MULP180-0330	with Molex Connector	30 V	3.75A	4.00A	6.00A	0.0 A	1%	PG & AC PF
MULP180-0048	with Screw Terminal	48 V	2.34A	2.50A	3.75A	0.0 A	1%	PG & AC PF
MULP180-0348	with Molex Connector	48 V	2.34A	2.50A	3.75A	0.0 A	1%	PG & AC PF
MULP180-0058	with Screw Terminal	58 V	1.94A	2.07A	3.10A	0.0 A	1%	PG & AC PF
MULP180-0358	with Molex Connector	58 V	1.94A	2.07A	3.10A	0.0 A	1%	PG & AC PF
ULP180-CKP metal cover kit accessory								

Connectors		
J1	Pin 1	AC LINE
	Pin 2	NOT FITTED
	Pin 3	AC NEUTRAL
J2 Option 1 & 2	Pin 1,2,3	V1 +VE
	Pin 4,5,6	V1 -VE
J3	Pin 1	FAN +VE
	Pin 2	FAN -VE
J4 (For PGPF Option Only)	Pin 1	Vs
	Pin 2	PGPF
	Pin 3	GND



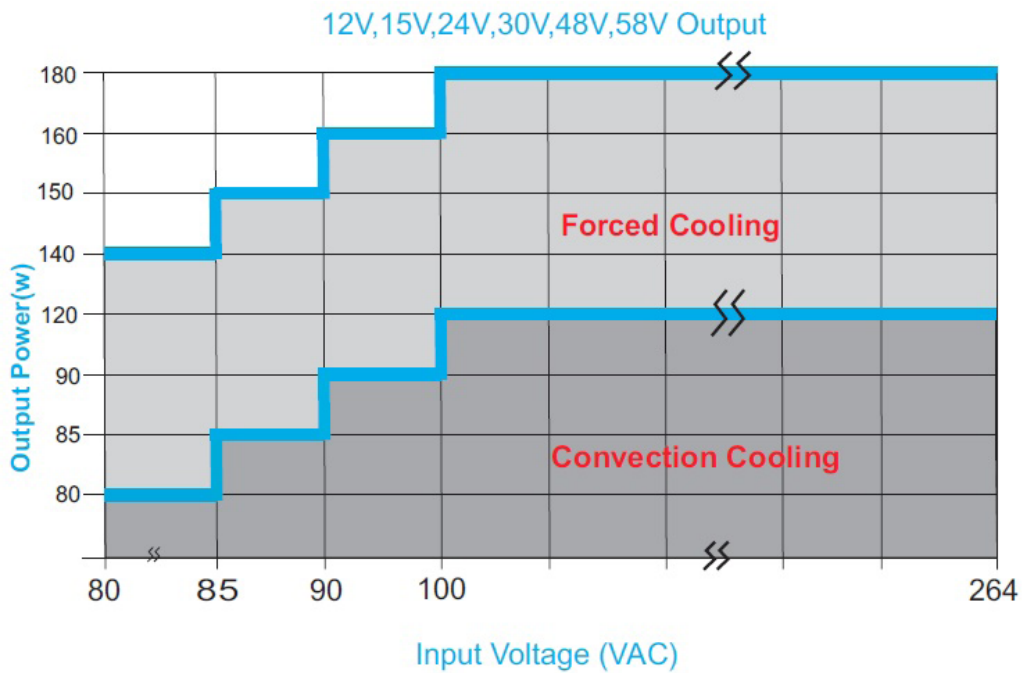
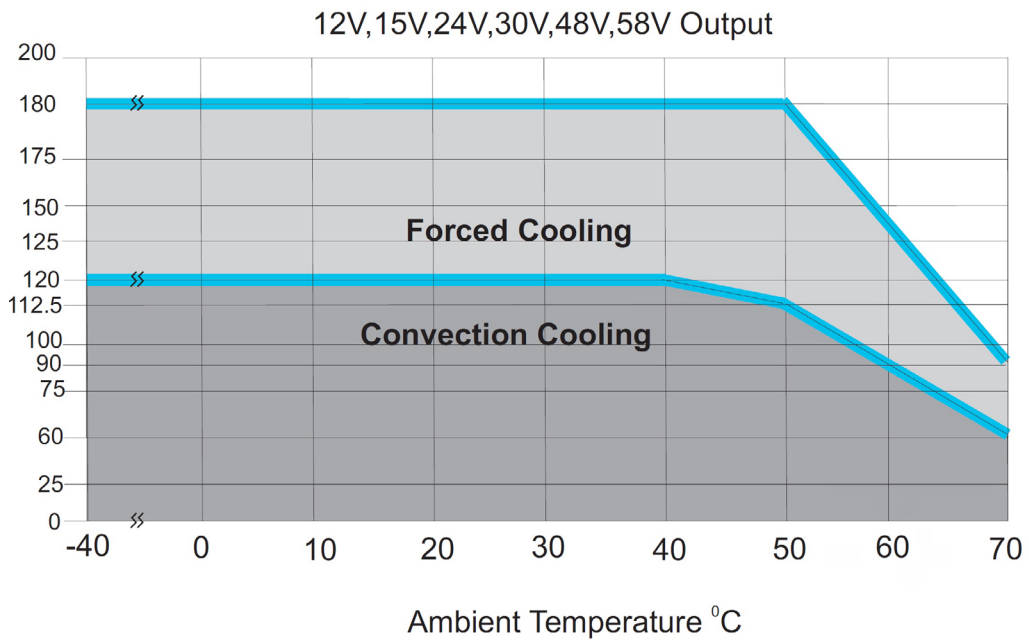
Innovations in Power

Notes

1. Ripple is peak to peak with 20 MHz bandwidth and 10 μ F (Tantalum capacitor) in parallel with a 0.1 μ F capacitor at rated line voltage and load ranges.
2. Class II means without input Earth pin.
3. Combined output power of main output, fan supply shall not exceed max. Power rating.
4. Fan supply output voltage tolerance including set point accuracy, line and load regulation is +/-10% and Ripple and noise is less than 10%.
5. Specifications are for nominal input voltage, 25°C unless otherwise stated.
6. 180W with 13CFM forced air cooling and 120W with natural convection cooling at 100 to 264VAC.
7. -40 to 0°C startup is guaranteed with spec deviation in output ripple and voltage regulation.

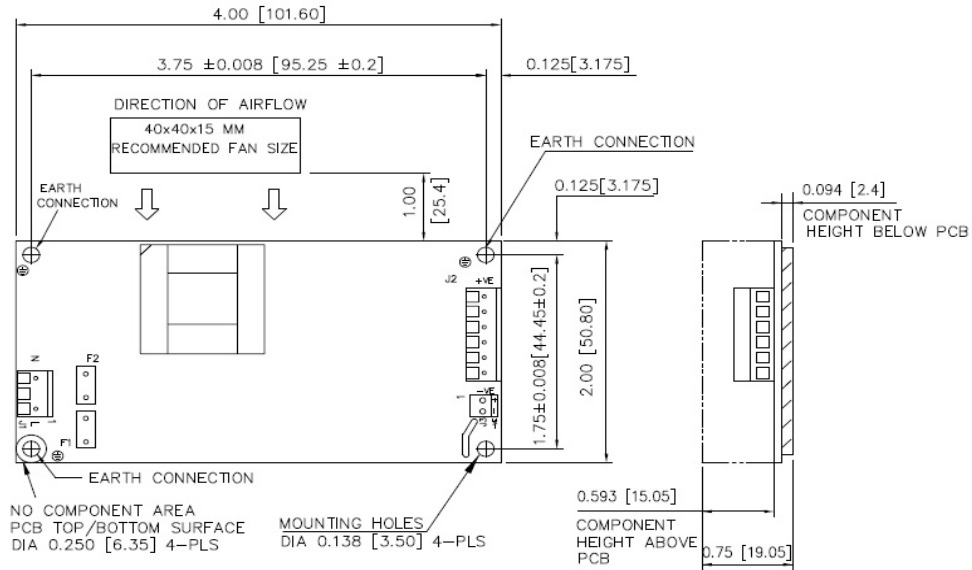
Mechanical Specifications	
AC Input Connector (J1)	Molex: 26-60-4030 Mating: 09-50-3031; Pins: 08-50-0106
DC Output Connector (J2) Option 1 (Screw Terminal)	Molex: 39357 Series or equivalent
DC Output Connector (J2) Option 2 (Molex Connector)	Molex: 26-60-4060 Mating: 09-50-3061; Pins: 08-50-0106
Aux (Fan) Output(J3)	AMP :640456-2 Mating: 640440-2
Signal Output (J4)	AMP :640456-3 Mating: 640440-3
Dimensions	4 x 2 x 0.75 inches (101.60 x 50.8x 19.05 mm)
Weight	200 gm approx
EMC	
CE Mark	Complies with LVD Directive
Conducted Emissions	EN55022-B, CISPR22-B, FCC PART15-B
Static Discharge	EN61000-4-2, Level-4
RF Field Susceptibility	EN61000-4-3, Level-3
Fast Transients/Bursts	EN61000-4-4, Level-3
Radiated Emissions	Level A radiated, Level B radiated with external core (King core K5B RC 25x12x15-M in input cable (5 turns))
Surge Susceptibility	EN61000-4-5, Level-3
Harmonic Current	EN61000-3-2, Class D
Safety	
Safety Standard(s)	EN60601-1, IEC 60601-1 (ed.3), ANSI / AAMI ES 60601 - 1, CSA C22.2 No. 60601-1
Approval Agency	Nemko, UL, C-UL
Safety File Number(s)	Class-I : UL: E173812,VOL D1, Nemko: Certificate No: P16221541, CB Test Certificate No : N094796 Class-II : UL: E173812,VOL D1, NEMKO: Certificate No: P16221548, CB Test Certificate No: N094850

Derating Curve



Mechanical Drawing

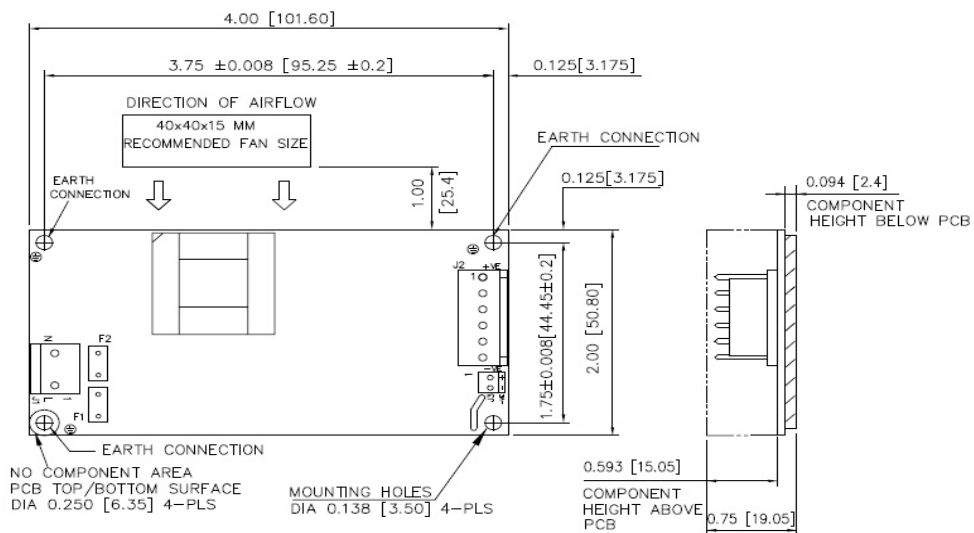
Option 1 (Without PGPF)



MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN TOLERANCE : +/-0.04[+/-1.0MM]

Mechanical Drawing

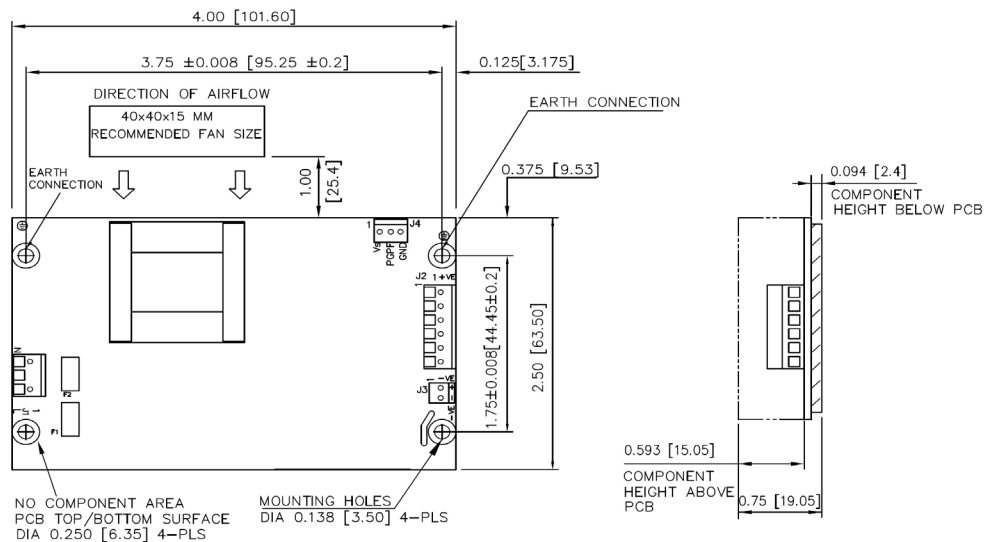
Option 2 (Without PGPF)



MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN TOLERANCE : +/-0.04[+/-1.0MM]

Mechanical Drawing

Option 3 (With PGPF)



Mechanical Drawing

Option 4 (With PGPF)

