

1000 Watt Medical



Features

- 5 x 9.51 x 1.61 inches
- Approval to EN60601 Edition 3.1
- Dual Fusing
- Current Sharing Option
- Peak Power Capability
- Standard IEC60601-1-2 : 2014 (4th Edition)
- 5 Vdc Stand by
- 12 V fan output
- Power Good / Power Fail Signal
- Suitable for BF application
- Lesser than 1U high
- Having high voltage output range up to 58VDC
- N+1 redundant power supply
- Single wire current sharing
- Built in OR-ing diode / FET (- R suffix)

Electrical Specifications

Input Voltage	85-264 VAC/120-390 VDC, Universal	
Input Frequency	47-63 Hz	
Input Current	120 VAC: 11 A max.	240 VAC: 5.5 A max.
Input Protection	F16A/250 V in Live & Neutral both	
No Load Power	Typ 3W over entire input range with main output kept off using Remote ON/OFF	
Inrush Current	240 VAC: 25 A max.	
Leakage Current	400 μ A @ 240 VAC / 50 Hz	Touch Current : < 100 μ A
Efficiency	120 VAC: 88% Typical 240 VAC: 93%	
Hold-up Time	120 VAC: 8 ms	240 VAC: 8 ms
Power Factor	120 VAC: 0.98	240 VAC: 0.95
Output Power	1000W Fan Cooled, Peak 1200W for 1mS	
Line Regulation	+/-0.5%	
Load Regulation	+/-1%	
Transient Response	< 10%, 50% to 100% load change, 50 Hz, 50% duty cycle, 0.1 A/ μ s, recovery time < 5 ms	
Rise Time	<100 ms	
Set Point Tolerance	+/-1%	
Output Adjustability	+/-3%	
Over Current Protection	110% Typ, HiccUp Type, Autorecovery	
Over Voltage Protection	114%, Latch Type, AC Power to be recycled for recovery	
Short Circuit Protection	Latch Type, AC Power to be recycled for recovery	
Over Temperature Protection	130-140°C primary heat sink, autorecovery	
Current Share	Upto 3 Supplies can be connected in parallel (optional)	
Switching Frequency	PFC converter:Variable, 85 kHz typical Resonant converter:Variable, 100 kHz typical	
Operating Temperature	-40 to +70°C, refer derating curve	
Storage Temperature	-40 to +85°C	
Relative Humidity	95% Rh, noncondensing	
Altitude	Operating: 16,000 ft.; Nonoperating: 40,000 ft.	
MTBF	3.37m Hours, Telcordia -SR332-issue 3	
Isolation Voltage	Input to Output 4245 VAC, Input to Earth 1625 VAC, Output to Earth 1500 VAC	
Cooling	Fan Cooled : 1000W	

Model Number	Type	Voltage	Max. Load	Min. Load	Ripple ¹
MVPS1000-1012	Fan Cooled	12V	41.67 A	0.0 A	2%
MVPS1000-1015	Fan Cooled	15 V	41.67 A	0.0 A	2%
MVPS1000-1024	Fan Cooled	24 V	41.67 A	0.0 A	2%
MVPS1000-1030	Fan Cooled	30 V	33.33 A	0.0 A	2%
MVPS1000-1048	Fan Cooled	48 V	20.83 A	0.0 A	2%
MVPS1000-1058	Fan Cooled	58 V	17.24 A	0.0 A	2%

Connectors		
J1	1	AC LINE
	2	NEUTRAL
	3	EARTH
J2	J2-A	+VE
	J2-B	-VE
J3	Pin 1	GND
	Pin 2	5V AUX
	Pin 3	PGPF
	Pin 4	VS -
	Pin 5	VS +
	Pin 6	GND
	Pin 7	RMT
	Pin 8	CL2
	Pin 9	CL1
	Pin 10	LS

Notes

- For Ripple measurement minimum output power requirement is 25 W.
Ripple is peak to peak with 20 MHz bandwidth and 10 μ F (Electrolytic capacitor) in parallel with a 0.1 μ F capacitor at rated line voltage and load ranges.
- Combined output power of main output, fan supply and standby supply shall not exceed max. power rating.
- Standby output voltage 5 V/ 1.5A with tolerance including set point accuracy, line and load regulation is +/-10%.
Ripple and noise is less than 5%.
- Specifications are for nominal input voltage, 25°C unless otherwise stated.
- PSU is supplied with J3, pin-6 and pin-7 shorted to enable main output without remote on/off feature.



Innovations in Power

Mechanical Specifications

AC Input Connector (J1)	TE Connectivity: NC6-P107-03
DC Output Connector (J2)	6–32 inches Screw Pan HD Mating: Designed to accept Ring Tongue Terminal AMP : 8-31886-1, wherein one 16 AWG(max) wire can be crimped. Note : One Ring Tongue Terminal with 16 AWG is recommended for current upto 11A only. Use multiple tongue terminals with wire for more current.
Signal Connector (J3)	Molex: 22–23–2101 Mating: 22–01–2107; Pins: 08–50–0113
Dimensions	5.0 x 9.51 x 1.61 inches (127 x 241.5 x 41 mm)
Weight	1.3 kg

EMC

Parameter	Conditions/Description	Criteria
Conducted Emissions	EN 55011-B,CISPR22-B, FCC PART15-B	Class B
Radiated Emissions	EN 55011	Class A (Class B with External king core K5B RC 25x12x15-M or equivalent)
Input Current Harmonics	EN 61000-3-2	Class A
Voltage Fluctuation and Flicker	EN 61000-3-3	Complies
ESD Immunity	EN 61000-4-2	A
Radiated Field Immunity	EN 61000-4-3	A
Electrical Fast Transient Immunity	EN 61000-4-4	A
Surge Immunity	EN 61000-4-5	A
Conducted Immunity	EN 61000-4-6	A
Magnetic Field Immunity	EN 61000-4-8	A
Voltage dips, interruptions	EN 61000-4-11	A & B

Safety

CE Mark	Complies with LVD Directive
Approval Agency	Nemko, UL, C-UL
Safety Standard(s)	EN60601-1, IEC 60601-1 (ed.3),ANSI/AAMI ES 60601-1, CSA C22.2 No. 60601-1
Safety File Number(s)	UL Certificate No : 2019-02-21-E173812 CB Test Certificate No : NO105338 Nemko Certificate No : P19223365

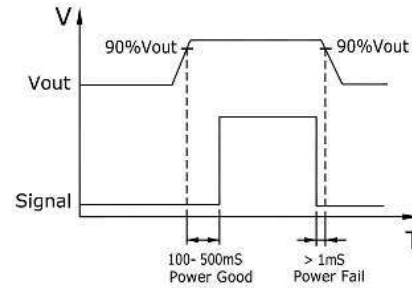
Signal(s)

Power Good / Power Fail Signal
The delay is 0.1 s to 0.5 s

value at AC Power off

Power Good : Is a TTL signal which goes high after main output reaches 90% of its set value.

Power Fail : The same signal goes low at least 1ms before main output falls to 90% of set



Remote Sense

Compensates for 200 mV drop

Remote on/off

Pin 6 & Pin 7 of J3 can be used for Remote on/off.

Shorting Pin 6 to Pin 7 enables main output while keeping the pins open disables main output

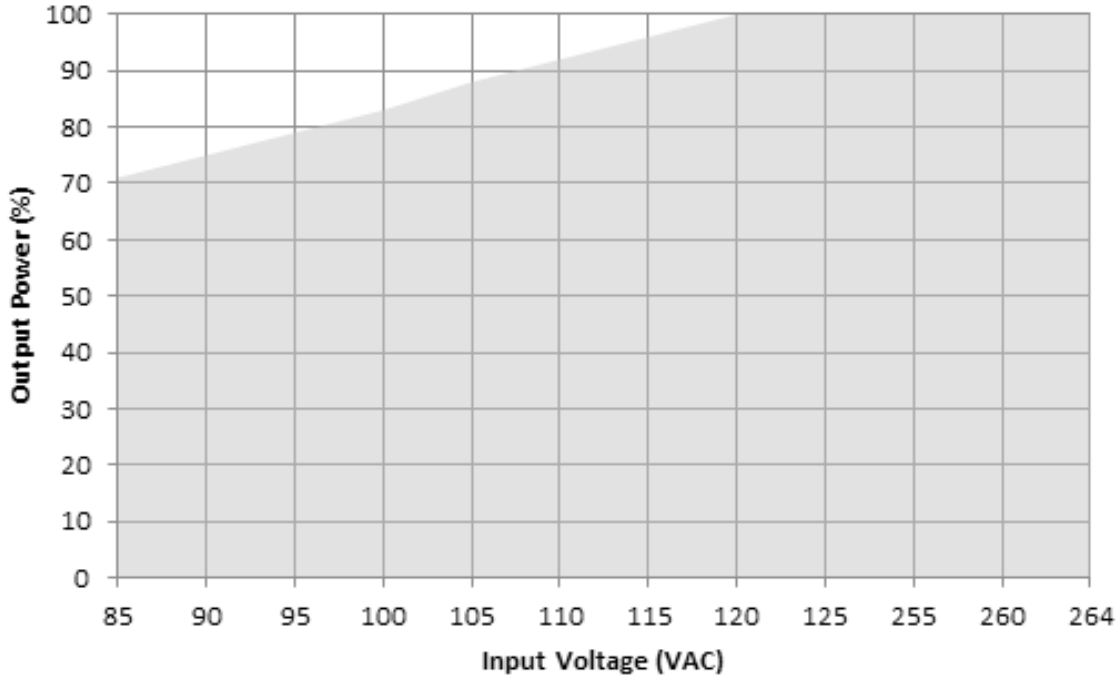
Note: - Provision of Inhibit Remote ON/OFF is available. +5V at Pin 7 will switch off the main output

OCP limit set

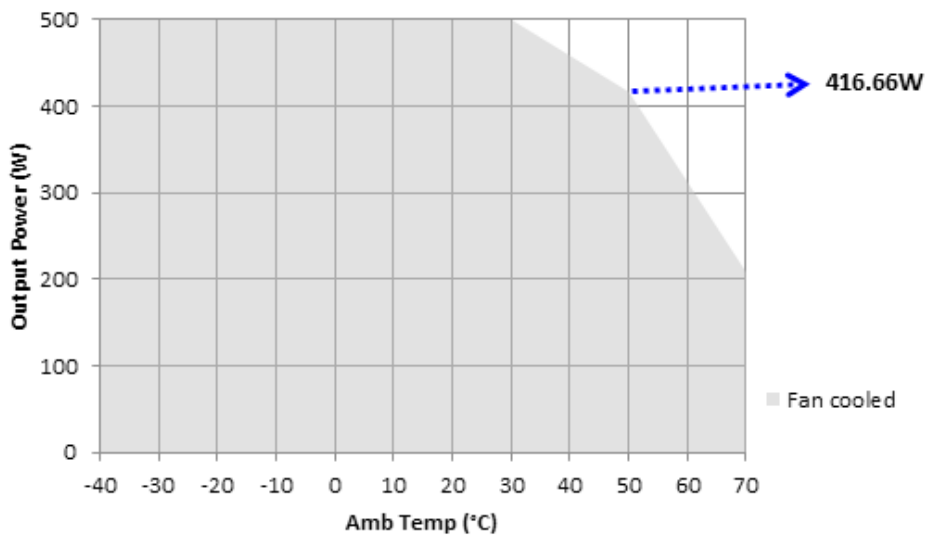
Pin 8 & Pin 9 of J3 must be shorted

Derating Curve

Derating Curve w.r.t Input



Derating Curve for 12 V



De-rate between 30-50 °C @ 0.833% per °C
De-rate above 50 °C @ 2.5% per °C

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