



MAD180 Series

180W High Power Density AC/DC power supply in a 2x3 inch package for Medical Applications



P-DUKE has announced the latest high-power density 180W medical AC/DC power supplies of MAD180 series. With forced air cooling these power supplies can deliver up to 180W and 150W at natural convection cooling. Additionally, an up to 220W peak output power for 5 seconds is available. This series is featured with 2XMOPP insulation, low leakage current less than 100 μ A, certified with IEC/EN/ANSI 60601-1 makes it suitable for any safety demanding type BF medical application. It comes in 2 x 3 Inch open frame versions or optional encased versions and DIN-rail versions with a universal input range of 85 to 264 Vac and also especially supports 120-370Vdc input range. This series provides 12, 15, 18, 24, 28, 36, 48, 53 Vdc single output voltage. The output voltage can be easily adjusted up to $\pm 8\%$ with the integrated potentiometer. They have the following protection functions: over-voltage protection (latch mode), over-current protection (hiccup mode and auto-recovery), short-circuit protection (continuous and auto-recovery) and over-temperature protection (sensed by an internal thermistor; hiccup mode and auto-recovery).

MAD180 series is equipped with long-life electrolytic capacitors, efficiencies up to 94%, power factor correction is 0.95, no-load power consumption of 150mW max. and IEC protection types of class I and class II. The power supplies can be operated at an altitude up to 5000m and with its superior performance at an operating temperature of -40°C to $+85^{\circ}\text{C}$.

The MAD180 power supplies have been certified to the following standards:

Safety approvals: IEC/EN/UL 62368-1

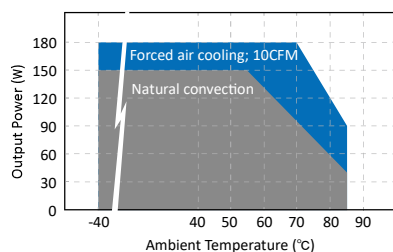
IEC/EN/ANSI/AAMI ES 60601-1

Conducted emissions: EN 55032 Class B

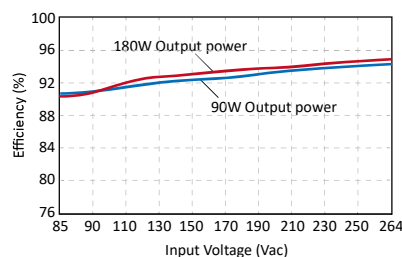
Radiated emissions: EN 55032 Class A

MAD180 has the most compact design within same power range of power supplies, it is ideal for medical diagnostic equipment for such as MRI scanners, laser treatment, X-ray and patient monitoring etc.

Product warranty is 5 years.



Derating Curve
Vin= 230Vac; Open frame type



Efficiency vs. Input voltage
MAD180US24; Forced air cooling

| Series | Input Voltage | Output Voltage | Insulation | Leakage Current | Over Voltage Category | Safety Approval |
|----------------|---------------|------------------------------------|-----------------------------------|-----------------|-----------------------|-----------------------------|
| MAD180 | 85-264 Vac | 12, 15, 18, 24, 28, 36, 48, 53 Vdc | 2MOPP | 100 μ A | OVC II | IEC/EN/ANSI/AAMI ES 60601-1 |
| *Medical grade | 120-370 Vdc | | 4000 Vac Reinforced insulation | | | IEC/EN/UL 62368-1 |



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