

MAGNETIC RESONANCE IMAGING (MRI)



1 Why do MRIs need a specific type of power supply?

- Magnetic field homogeneity is crucial for distortion-free images and high signal-to-noise ratio
- Weak MRI signals and any small external RF interference can degrade image quality
- Shielding of the examination room and MRI scanner minimizes RF emissions
- Most power for fixed MRI systems needs to be located outside the examination room, with mainly DC PSUs used inside

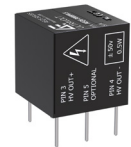
2 Typical power supply and voltages levels used in MRI

- Power supplies for the different parts of the MRI (incl the fixed patient support) range from 0.6 to 3 kW with 5, 12, 24 and / or 48 V output
- Portable mobile MRI systems mainly use configurable medical PSUs like CoolX18M with 1.8 kW of power and several outputs
- External coils require detuning during RF excitation to prevent unwanted coupling and protect the preamplifier. The detuning could be achieved via PIN Diode switching. UltraVolt high voltage DC-DC range offers compact, reliable solutions for pin diode switching as well as for high-energy pulsers, amplifiers, and discharge



CoolX1800

Up to 1800 W configurable, fanless AC-DC power supplies offering 50% more power than the industry standard.



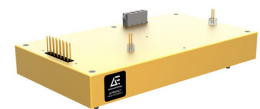
AEQ Series

Ultra-miniature DC-DC supplies up to 600 VDC at 0.5 W or 1.25 W and optimal for space critical high-voltage projects.



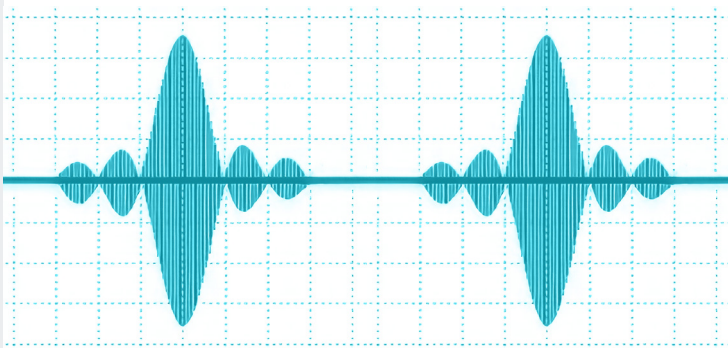
HVA Series

Precision DC-DC high voltage amplifiers delivering 1000 to 20,000 VDC of maximum high voltage power in positive, negative, or bipolar polarity configurations.



High Power C Series

Regulated DC-to-DC capacitor-charging supply ideal for > 30 W for laser, pulsed power, pulse generator, and test equipment applications.



Why AE as preferred power partner

- Proven and highly reliable medical PSU minimize development time and reduce risk
- Broadest medical power portfolio
- Unsurpassed quality with best-in-class QMS
- Dedicated medical engineering and customer support teams
- Standard off-the-shelf products or full custom solutions based on application requirements

