CASE STUDY:

ACHIEVING ISOLATION & MINIMIZING EMI WITH TOROIDAL TRANSFORMERS IN MEDICAL BEDS

AT A GLANCE

Requirements

- Isolation between input (primary) and output (secondary)
- Low Leakage current and thermal switch built-in
- Minimize the EMI (Electromagnetic Interference)
- Safety marking UL, cUL standard for 60601-1 and CE Marked
- 2MOPP (Means of Patient Protection)
- Specific insulation, creepage and clearance
- Dielectric strength 4kV between primary and secondary
- High efficiency

Benefits

- Lead time: Customize to meet tight development timeline
- Toroidal reduce EMI (Electromagnetic Interference) ideal for medical applications.
- Longer lifespan with high grade copper and steel
- Custom solution design: Electrical design and dimension.
- Safety compliance: IEC 60601-1 safety with UL, cUL & CE Mark

OVERVIEW

Astrodyne TDI partnered with a medical bed manufacturer to address power-related challenges, ensuring isolation between circuits, low leakage current, and thermal switch integration. Compliance with 60601-1 standards, minimizing EMI, and obtaining safety certifications like UL, cUL, CE marking, and 2MOPP were essential. Maintaining insulation, creepage, clearance, and 4kV dielectric strength, along with high efficiency, was crucial.

POWER CHALLENGES

Astrodyne TDI introduced a toroidal design product meeting medical standards, ensuring safety and quality. Its low-profile structure suits various applications, and we offer custom solutions, including harness assembly, housing, and connectors. We provide blanket orders and warehouse stocking for convenience. Our medical-grade toroidal transformers are compact, lightweight, and efficient, reducing core losses and conserving energy. They minimize noise and manage heat well, ensuring optimal equipment performance and longevity. Complying with top safety standards, they incorporate 2MOPP insulation and precise creepage and clearance distances, making them ideal for medical use.

ASTRODYNE TDI'S SOLUTION

Astrodyne TDI offers advantages like flexible lead times, reduced EMI through toroidal designs, and durable construction with premium materials. Custom solutions meet specific needs, and safety compliance with IEC 60601-1, UL, cUL, and CE Mark is prioritized.