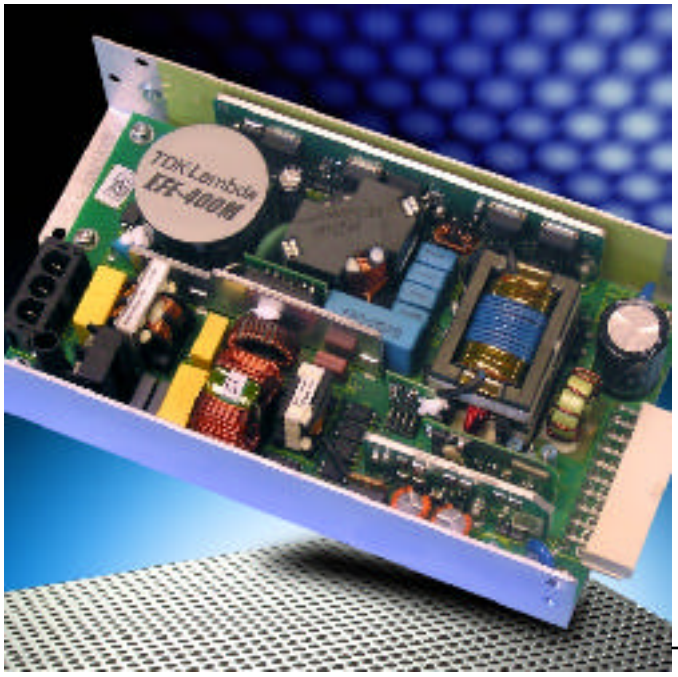
Digitally Controlled 400-Watt Power Supplies Meet Medical Specs



TDK-Lambda Americas has extended the power range of its digitally-controlled EFE-M series of medical/ITE power supplies from 300 to now 400 W. The EFE400M series was designed with Medical and ITE applications in mind. With a 4 kVAC reinforced input to output isolation and an output-to-ground isolation of 1,500 VAC, the EFE400M meets the rigorous international safety standards of IEC/UL 60601-1 for medical equipment, making it suitable for use in B (body) and BF (body floating) type medical and dental applications. Regulated DC outputs of 12, 24, or 48 VDC are standard, plus other voltages can be provided.
With a 3.5 x 6.5 inch footprint and less than a 1 U profile, the EFE400M can be incorporated easily into designs where space is limited so the end product can be smaller and cooler. Other features, such as a redundant operation capability, a standby voltage output, and ITE safety certifications per IEC/UL 60950-1, make the EFE400M equally suitable for high-integrity applications (in addition to medical).

The EFE400M series includes an integrated magnetics transformer (transformer and inductor windings on the same core) to boost efficiency to typically 90% and employs an 8-bit microcontroller for full digital control of the output and to handle housekeeping routines. This resulted in a 25% parts count reduction to achieve a 45% smaller and up to 56% lighter design when compared to similar competitive products. Power densities of up to 15.6 W/in3 are achieved under peak load conditions and 13.1 W/in3 under continuous loading.

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