MODULAR POWER-CONVERSION SYSTEM

Solution 2 - Architecture with independent switches

Technological advantages

Simple/modular

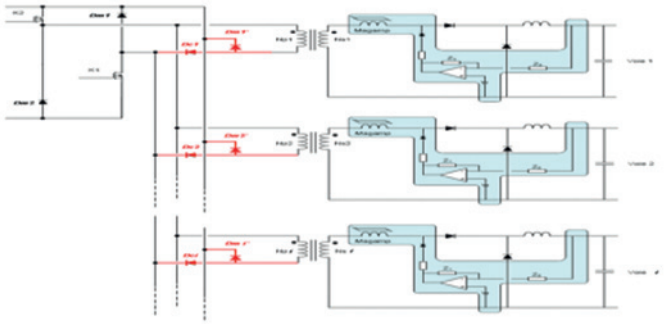
Simplification of DC-DC converters.
Modular system.
Two stages: primary then post-regulator.
Requires fewer parts.
Easy to integrate in complex specifications.

Robust

Very robust, better guarantee against wear.
Stable power supply for all output.

Optimisation of power supply

Minimum loss of power.
Attractive modular electrical power conversion system for very low voltages.
A single primary stage followed by simplified post-regulator stages.
Independent galvanic insulation for each output (between primary and secondary and also between the different secondaries).



Architecture with separate switches

Modular system for converting power from an asymmetrical bridge power converter.

Summary of the invention

Linking transformers in parallel is incompatible with an asymmetric bridge system (saturation of transformer, losses, malfunctions).
The aim of this invention is to make a simple electrical power conversion and distribution system which overcomes this difficulty. It consists of the simplest possible multi-output power-conditioning system with galvanic insulation of the primary and secondary parts. It is extremely robust in the event of short-circuits and is extremely easy to implement. The invention is based on an architecture with independent switches.

Potential applications

Space, avionics, automotive, train, scientific instruments and equipment.

Complementary inventions

Patent sheet B 1125 - Modular power-conversion system - Solution 1: Diode-based architecture.

Commercial advantages

Reliable

High-performance system for effectiveness in relation to volume while responding to stringent constraints/complex specifications where there is a need to regulate a large number of separate voltages.

Economical

Low manufacturing cost.
Robust and durable

TRL : 4-5

Patented invention available under licence

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For further information

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