Coupled-Coil Inductor Inverters

Producing multi-level output voltage from just two fast-switching semiconductors by using a coupled inductor. This frees the inverter from dead-time and greatly reduces low-order harmonics.

Competitive advantage

- More reliable: coupled inductor lowers the risk of DC-link shoot-through
- Cost-effective: Fewer semiconductors are employed for three-level output
- Simpler control: no need to balance DC-link capacitors voltage under any condition

Impact

- Improves efficiency and reliability
- Successful applications
- Inverter-based five-phase permanent-magnet synchronous machine-drive system

Capabilities and facilities

- Advanced control platform with DSP and FPGA
- High bandwidth oscilloscope
- Multifunction test rig
- Four-quadrant 20 kW programmable power supply

More Information

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