High-Performance Inductors for Inverters

—Key Requirements & YETCOIL Professional Solutions

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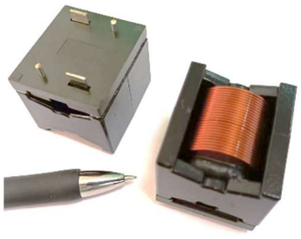
1. Core Functions in Inverter Systems



Inductors — including input reactor, DC link choke, output / dv/dt reactor and common-mode inductor — are critical components in inverters for harmonic mitigation, surge protection, ripple filtering, motor insulation protection and EMC performance.

2. Critical Performance Requirements for Inverter-Grade Inductors

2.1 Electrical Performance

- Stable inductance with tolerance ±2%, minimal variation under full load
- Sufficient current rating: Irms ≥1.1×inverter rated current, Isat ≥1.3×peak current
- Class F/H insulation system, dielectric strength ≥2000V/1min, insulation resistance ≥100MΩ

2.2 Magnetic Performance

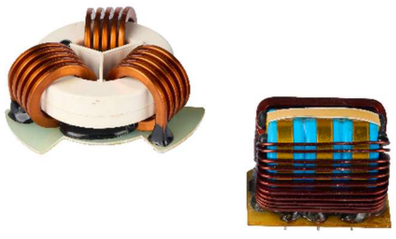
- Non-saturating at 150% rated current
- Low core loss and high impedance at typical switching frequencies (2kHz–16kHz+)
- Low magnetic leakage (<5%) for improved anti-interference capability

2.3 Thermal & Mechanical Performance

- Low DCR, low temperature rise (≤45K), wide operating temperature range (-55℃ to 125℃)
- High vibration resistance, vacuum encapsulation (IP54), dust and moisture protection
- Long service life ≥100,000 hours

2.4 EMC Performance

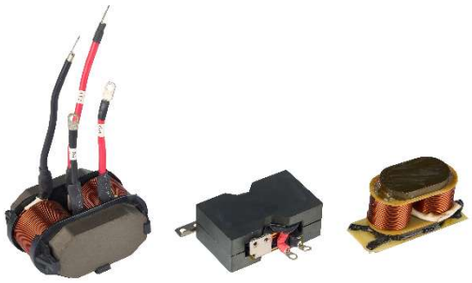
- Comply with IEC 61800, high common-mode impedance, reduce conducted and radiated noise



3. Advantages of YETCOIL Inductors for Inverters

- Custom magnetic materials (nanocrystalline, high-flux powder core) prevent saturation

- Flat wire / litz wire winding reduces loss by 35%, efficiency ≥99.5%
- Precision manufacturing, low temperature rise, high reliability
- Full power range: 0.75kW–2MW, customizable for voltage, current, dimensions and protection level
- Proven performance in inverters, servo drives and power conversion systems with low THD and stable operation



4. Conclusion

YETCOIL delivers high-performance, application-optimized inductors designed specifically for inverters, improving efficiency, reliability and EMC compliance for industrial drive systems.