水冷式电抗器

Water-cooled reactors

产品及应用 PRODUCTS APPLICATIONS

YIBO LAIB®

- ▲ 水冷式电抗器是一种将金属管用作导线制成绕组,然后在 绕组通电时用水冷却的一种新型电抗器,相对于传统电抗器, 该电抗器主要有以下优势:
 - 1.体积小、绕制简单,特别适合制作大电流电感;
 - 2.成本低,特别在超大容量、超大电流情况下节约成本更加显著;
 - 3.温升低,由于采用水循环冷却,导线散热效果极佳。
- Water-cooled reactor is a new type of reactor in which metal tubes are used as wires to make windings, and then water is used to cool the windings when they are energised, which has the following main advantages over traditional reactors:
 - 1. Small volume, simple winding, especially suitable for the production of high-current inductors;
 - 2. Low cost, especially in the case of ultra-large capacity, ultra-large current cost savings is even more significant;
 - 3. Low temperature rise, due to the use of water-circulating cooling, the conductor heat dissipation effect is excellent.

技术参数 SPECIFICATION

1.冷却方式:水冷电抗器水路部分工作压力为4.0bar水流流量: 16L/MIN水路接头采用G3/4寸内螺纹管

2.绝缘等级: H级

3.电感量: 4mH (允许偏差: ±5%) 4.额定电流(有效值): 1000A/相

5.纹波电流: 小于40A(峰峰值),频率3kHz

6.基波频率: 50Hz

7.相数:三相,两两相之间最大电感量差:
<2%

8.开关频率:逆变桥开关频率3kHz

9.相与相之间的电压波形: 3kHz PWM脉冲电压,峰值1500V

10.最大dv/dt为3000V/μS

11.过载要求:过载5%(长期运行)、过载10%(30min)、过载50%(10s)

A.过载期间电抗器不饱和,既电感量变化小于10%;

B.过载期线圈和磁芯温升小于100°C;

12.温升:线圈和磁芯温升小于80°C;

13.耐受电压:绕组、磁芯、支架两两之间,AC3500V/50Hz/10mA,1分钟

14.绝缘电阻:绕组、磁芯、支架两两之间,>10MΩ (DC100V)

15.噪声等级: 小于65dB (1米处)

16.防护等级: IP00

17.存储温度: -40°C~70°C

18.工作温度: -30°C~55°C,50°C以上降额使用

19.应用海拔: 1000米以下额定电流, 1000米以上每升高100米降额1%

- 1. Cooling mode: water-cooled reactor water circuit part of the working pressure of 4.0bar water flow: 16L/MIN water circuit connector using G3/4 inch female threaded pipe.
- 2. Insulation grade: Class H
- 3. Inductance: 4mH (allowable deviation: ±5%)
- 4. Rated current (RMS): 1000A/phase
- 5. Ripple current: less than 40A (peak-to-peak), frequency 3kHz
- 6. Base wave frequency: 50Hz
- 7. Number of phases: three-phase, the maximum inductance difference between

two two-phase: <2%

- 8. Switching frequency: inverter bridge switching frequency 3kHz
- 9. Voltage waveform between phase and phase: 3kHz PWM pulse voltage, peak value 1500V
- 10. Maximum dv/dt of 3000V/µS
- 11.Overload requirements: 5% overload (long-term operation), 10% overload (30min), 50% overload (10s)
- A. The reactor is not saturated during overload, both in terms of inductance change of less than 10 per cent;
 - B. Temperature rise of coil and core during overload period is less than 100°C;
- 12. Temperature rise: coil and core temperature rise less than 80 °C;
- 13. Withstand voltage: winding, core, bracket two by two, AC3500V/50Hz/10mA, 1 minute
- 14. Insulation resistance: winding, core, bracket between two, $> 10M\Omega$ (DC100V)
- 15. Noise level: less than 65dB (1m)
- 16. Protection level: IP00
- 17. Storage temperature: -40 ° C ~ 70 ° C
- 18. Operating temperature: -30 ° C ~ 55 ° C, more than 50 ° C derated use
- 19. Application altitude: 1000 m below the rated current, the Derating 1% for every 100 metres above 1000 metres.