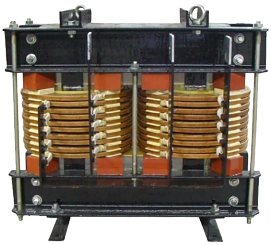
Двенадцатиимпульсный выпрямитель

Двенадцатиимпульсный выпрямитель является ключевым компонентом источника питания для плавления льда постоянного тока. Блок питания для плавления льда постоянного тока использует двенадцатиимпульсный выпрямитель для преобразования трехфазного переменного тока в постоянный, обеспечивая необходимую мощность постоянного тока для плавления льда на линиях электропередачи.





Working principle3: The DC ice-melting power supply needs to convert the AC power in the power grid into DC power, and then apply it to the ice-covered transmission line, using the heating effect of the wire after the current is passed through the wire to melt the ice. The twelve-pulse rectifier converts the three-phase AC power into DC power through the cooperation of the phase-shifting transformer and the double six-pulse rectifier bridge, meeting the DC output requirements of the DC ice-melting power supply.

Device composition4: Many DC ice-melting devices are directly constructed with the twelve-pulse rectifier as the core. For example, the DC ice-melting device for transmission lines based on twelve-pulse uncontrolled rectification is composed of a rectifier transformer, a twelve-pulse rectifier, a series-parallel knife switch, an inductive voltage suppressor, etc., among which the twelve-pulse rectifier is the key component for realizing AC-DC conversion.

• Performance advantages: The DC power output by the 12-pulse rectifier has low harmonic content and good voltage stability, which can provide a better power supply for DC ice melting. This makes the DC ice melting process more stable and efficient, reduces harmonic interference to the power grid, improves the ice melting effect and the reliability of equipment operation5. At the same time, its high rectification efficiency also helps to reduce the energy consumption of the DC ice melting power supply and save operating costs5.

• Practical application 2: In actual DC ice melting projects, the 12-pulse rectifier is widely used. For example, the fixed DC ice melting device often uses the 10 kV power supply introduced from the substation, which is sent to the 12-pulse thyristor rectifier after passing through the three-winding rectifier transformer, and then outputs the DC voltage and current suitable for ice melting after rectification.

