



QING

北京清畅电力技术股份有限公司

CHANG

QGG
SOLID INSULATED RMU



PRODUCT OVERVIEW

Technology integration leads to breakthrough innovation. Via combining the experience in developing air insulated RMU and gas insulated RMU, Qingchang Power Technology developed the QGG solid insulated RMU, which is a vital breakthrough in the field of medium-voltage technology. The QGG solid insulated RMU is recommended as the high-tech achievement by the Beijing Municipal Commission of Science and Technology, since it has a high-level operational safety and operating in the electrical distribution network as a core unit.

The vacuum arc extinguish chamber of this RMU is used for arc extinguishing, Moreover, the high voltage live parts are using the solid insulating material (epoxy resin), a kind of special material with excellent insulation characteristics, to do the casting moulding. The 0.03Mpa air tank has been canceled, thereby, this RMU realised completely insulation, sealing, and maintenance-free.

QGG solid insulated RMU has real-time intelligent monitoring system to monitor the key part inside, The monitoring system could gain the state parameter and automatically predict the possibility of failure occurrence, and guarantee the stability of the RMU, as well as the whole distribution circuit.

After couples of years R&D, the solid insulated RMU has generated to the IV series product, each generation has unique features. This QGG series has significant technology advantage, currently, it has been widely chosen by many domestic grid companies, and sold abroad.

QGG solid insulated RMU is an environmental protection equipment. It has pass the type test, and applicable to the electricity distribution circuit in different industries (including the extreme environment), for example:

TRANSFORMER SUBSTATION

- Consumer substation
- Electricity system
- The transformer substation and switching station of facilities

INDUSTRY SECTOR

- Wind-power station
- High-rise building
- Open-pit coal mines
- Airport, metro
- Sewage treatment plant
- Port facility
- Traction power supply system, urgent electric system
- The industry of vehicle, petroleum, chemistry, cement, thermal, textile, and pulp & paper

TYPICALLY
APPLICATION



STANDARDS

QGG-solid insulated RMU match the following standards and regulations:

GB 1984-2003: High-voltage alternating-current circuit-breakers

GB 3906-2006: Alternating-current metal-enclosed switchgear and controlgear for rated voltages above 3.6 kV and up to and including 40.5 kV

GB 1985-2004: High-voltage Alternating-current Disconnectors and Earthing Switches

GB 3804-2004: High-voltage alternating-current switches for rated voltage above 3.6 kV and less than 40.5 kV

GB 16926-2009: High-voltage alternating current switch-fuse combinations

GB/T 11022-1999: Common specifications for high-voltage switchgear and controlgear standards

DL/T 1586-2016: 12 kV Solid Insulated Metal-Enclosed Switchgear and Control Equipment

FEATURES



FEATURES

SAFE FOR USING

- What you see is what you get, and the switch panel has specific signs of opening and closing
- Once the primary components are sealed into the tank, the enclosure could be touched safely
- Via special designing of insulated structure, the surrounding electric field distribution is effectively optimised
- Reliable mechanical and electrical interlock, which could avoid mis-operation effectively

. SAFE

ENVIRONMENT FRIENDLY

- Avoid using SF6 gas as the arc extinguish and insulated medium
- Most simple structure, “3 in 1” , the breaker, disconnecter and grounding fuction are integrated together
- The primary loop has least contact design to keep low energy consumption when operating
- Completely using eco-friendly material

. ECO-FRIENDLY

INTELLIGENT DESIGN

- Advanced protection, control, and monitoring function
- Easy to realise distribution system automation and prepared for smart grid

EASY TO USE

- Modular design and could be free combined for clients' demand
- Cable wiring and the operation interface are located at the front of the cabinet, which is convenient for operation and maintenance.
- Has large room for cable installation, and the plugs are arranged horizontally. Thus, the commutation is convenient
- Operation panel is clear, simple and easy to understand

MAINTENANCE-FREE, LOW OVERALL COST

- The cabinet has compact design, the distance between different type of cabinet is only 415mm, thus, saves space
- Utilise long-life solid insulated material as the insulating medium
- Adopt vacuum breaker or vacuum load switch, which are maintenance-free
- Primary component and mechanical structure are permanently sealed into the all sealed box
- Do not need SF6 gas pressure test



KEY COMPONENT
DESIGN

● ARC EXTINGUISH CHAMBER & SOLID INSULATION

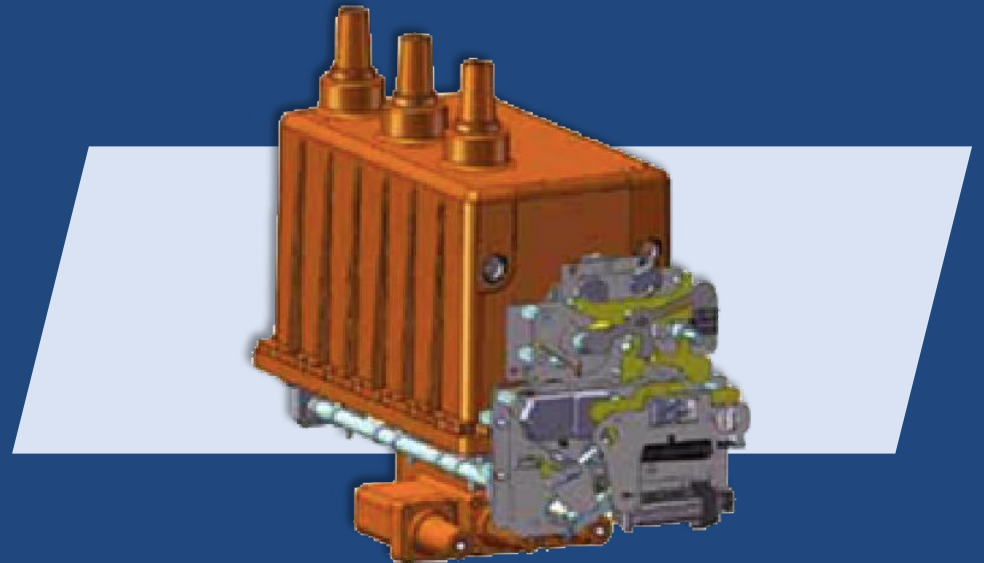
The high-quality epoxy resin is used as the main insulating material that surround the primary component. According to the demands, engineers could modularly design each component, In order to have the highest insulation performance, structure strength and cooling performance. Qingchang has rich experience in designing and producing solid insulated product. We have the insulation techniques of structuring miniaturised three-phase integration.

Through designing every primary component specially, the QGG III series of solid insulated switchgear optimises the the electric-field.

The vacuum interrupter or load breaker adopts simple and reliable spring mechanism or advanced permanent magnetic mechanism. The mechanism has a few moving component, which are inside the completely sealed box, thereby, the external environment change has less influence to the mechanisms.

Features:

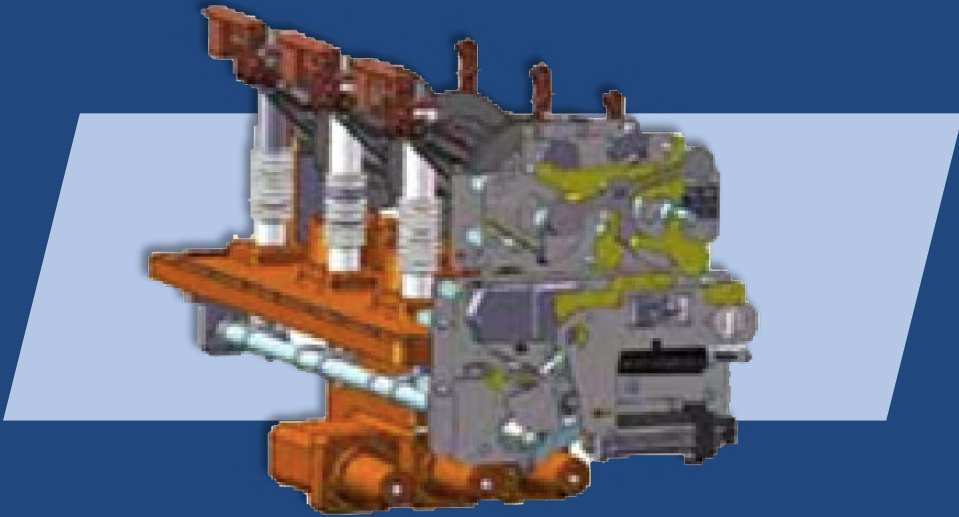
- Utilise eco-friendly vacuum arc extinguish chamber technique
- The spring stored energy mechanism is simple
- Manual or electrically operating are both available
- A clear instruction of the machine position and observation window are both provided
- Auxiliary contact could be applied to closing and opening switch



● THREE-PHASE ISOLATION SWITCH

The three-phase isolation switch is sealed in the epoxy resin with the main switch. It has a three-phase spindle and three positions (put into operation, interrupting and grounding).

Since this component adopts mechanical interlock, the function hole can only be opened and operated when the main switch is in the off position.



Features:

- Manual operating method, and has three positions (put into operation, interrupting and grounding)
- Built-in the permanent sealed box
- Could provide auxiliary contacts of put into operation, interrupting and grounding
- An instruction of the machine position and the observation window are both provided
- Mechanical interlock with the main switch
- Three-phase integration structure

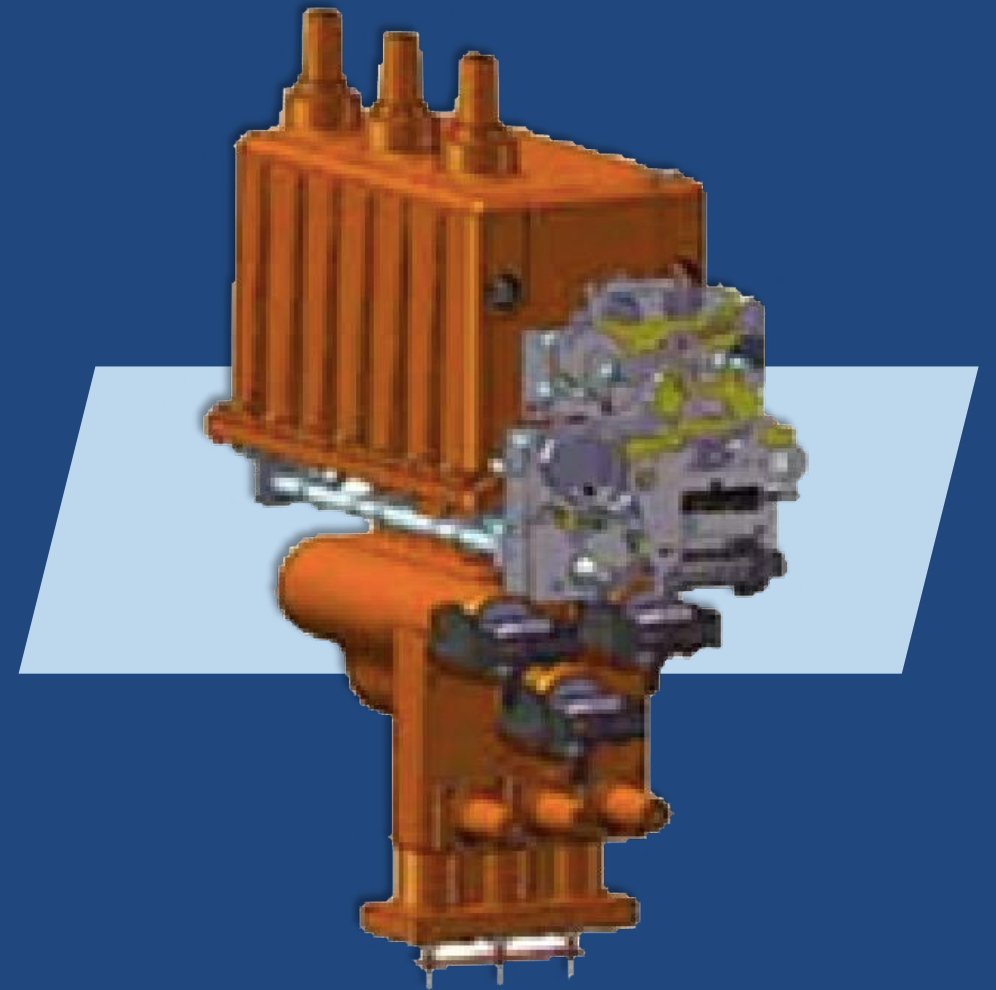
● LOAD BREAKER & FUSE COMBINATION

To meet the demand of small capacity load fuse protection, Qingchang developed a safe, reliable, and compact load breaker & fuse protection combination electrical unit.

This combination blends the advantages of Qingchang high-performance vacuum arc extinguish chamber and the compact design of solid insulated fuse unit. Thereby, it has a wider protection range. Furthermore, the fuse could be changed when the upper and lower ends are grounding at the same time, and protect the workers.

Features:

- Compact structure and three-phase integrated solid insulation fuse unit technique
- When changing the fuse, the upper and lower ends could both grounding, which means, it is safe and reliable
- 3150A alternate current





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