Gas Insulated Ring Main Unit

RVAC outdoor RMU

Professional solutions ,
Reliable power

EATON

Powering Business Worldwide

Powering business worldwide

Eaton delivers the power inside hundreds of products that are answering the demands of today's fast changing world.

We help our customers worldwide manage the power they need for buildings, aircraft, trucks, cars, machinery and entire businesses. And we do it in a way that consumes fewer resources.

Next generation transportation

Eaton is driving the development of new technologies – from hybrid drivetrains and emission control systems to advanced engine components – that reduce fuel consumption and emissions in trucks and cars.

Higher expectations

We continue to expand our aerospace solutions and services to meet the needs of new aviation platforms, including the high-flying light jet and very light jet markets.

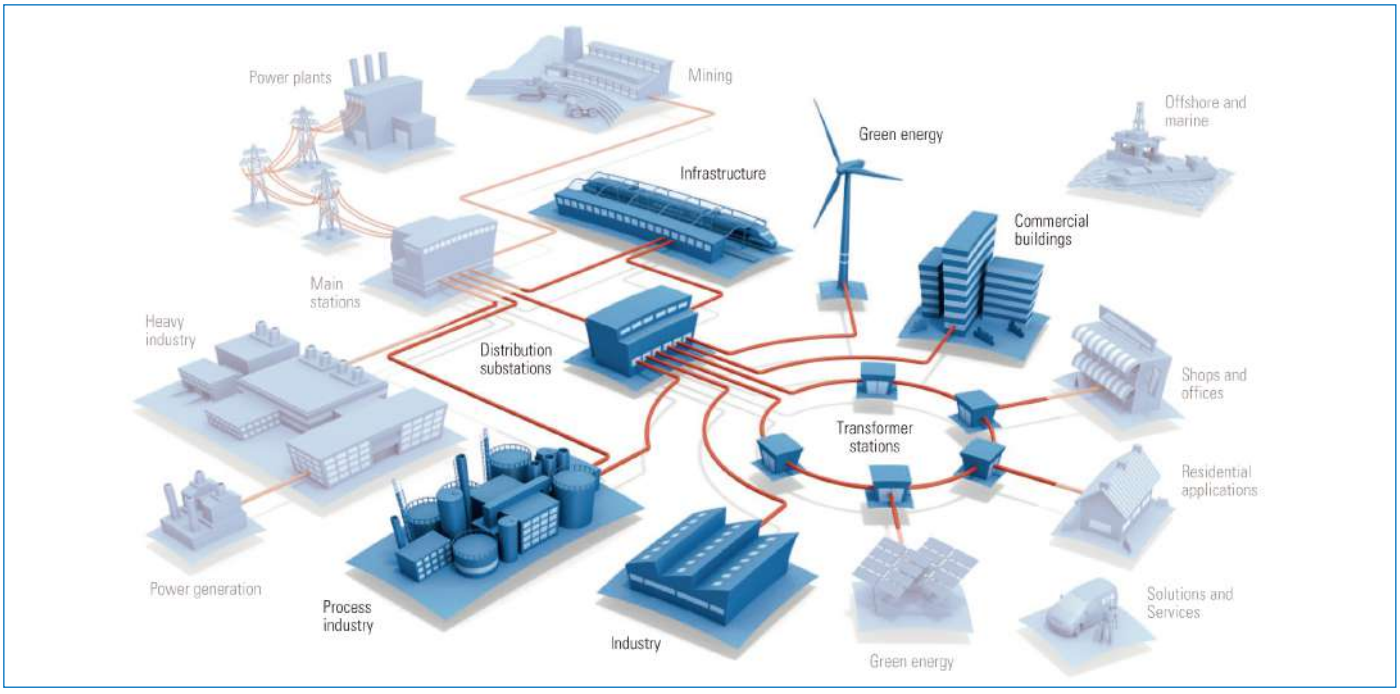
Building on our strengths

Our hydraulics business combines localised service and support with an innovative portfolio of fluid power solutions to answer the needs of global infrastructure projects, including locks, canals and dams.

Powering Greener Buildings and Businesses

Eaton's Electrical Group is a leading provider of power quality, distribution and control solutions that increase energy efficiency and improve power quality, safety and reliability. Our solutions offer a growing portfolio of "green" products and services, such as energy audits and real-time energy consumption monitoring. Eaton's Uninterruptible Power Supplies (UPS), variable-speed drives and lighting controls help conserve energy and increase efficiency.

RVAC Ring Main Unit Construction Feature



Smart grid readiness

Designed to integrate solutions for sensing, monitoring and remote control for feeder automation and load management purposes.

Personal safety

- Logical mechanical and electrical interlocks;
- Complete enclosure earthing, to ensure zero potential for interface;
- Compartments protected against penetration of objects;
- Capacitive voltage detection system for verification of safe isolation from supply;
- Feeder earthing by means of make-proof earthing switch.

Environmental-friendly concept

- Low power loss, low maintenance spending, ensuring more reasonable cost investment;
- Only reusable and/or recyclable materials can be used to do the most compact design;
- In normal working conditions, gas leakage rate of lower than 1‰ ensures more than 30 years life-cycle;
- Without gas work on site through installation, operation, extension, and replacement of the product.

User friendly

- Cable connection and user interfaces for operation on the same front side of the panel;
- Ergonomic cable connection height;
- A customized low voltage compartment is optional;
- Clear and simple straightforward operation panels.

Modular design and flexible configuration

- Both multi-functions in one tank solution and individual panel can be freely combined and extended, to satisfy demands of different customers;
- Non-extensible and both side extensible design suit for your requirements.
- Flexible extension of unit modules on site, easy to build medium voltage transformer substations according to different requirements;
- Two options are available for transformer and line protections: load break switch-fuse combination units and circuit breakers with relay protection.

All-weather and high adaptability to environment

- SF6 gas tank is made of stainless steel plates, with anti-rust painting treatment on the surface, to protect against salt spray, humidity, dirt and temperature, and to ensure durable nice appearance;
- COOPER pre-fabricated shielding touchable cable terminal is supplied, suitable for long-term operation underwater or in other severe conditions.

Operation

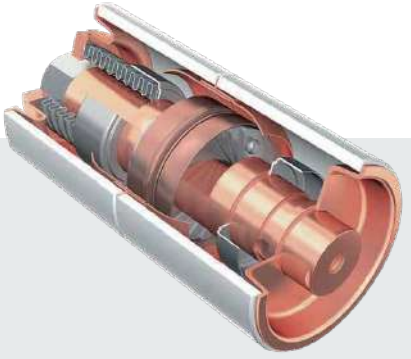
- Complete design certified in accordance with IEC standards;
- Arc fault tested according IEC 62271-200;
- Quality assurance in accordance with ISO 9001;
- Touching safe and hermetically sealed primary enclosure;
- Gas tank's zero gauge voltage withstand (1min) can reach power frequency withstand voltage.

Eaton core technology inside

Load break switch

The load break switch is a 3-position switch, with Close, Open and earthing position. When in Open position, the moving blade has sufficient insulation distance. An operating handle can be used to make close-open operations on load break switch and earthing switch. There are mechanical interlocks between the load break switch and the earthing switch.

- The load break switch applies metal deionizing arc suppress technology, ensuring good interruption performance for the switch;
- The working speed of switch's moving contact depends on its operation mecha nism; and the open-close speed of the switch will not be influenced by operators;
- When moving from closing to opening, the load break switch depends on moving contact speed and arc suppress devices simultaneously, to suppress arc and break current;
- The spring operation mechanism with an operating handle to complete closing and opening operations. Motorization module and opening coil can be added, to achieve remote control.



Vacuum Circuit Breaker

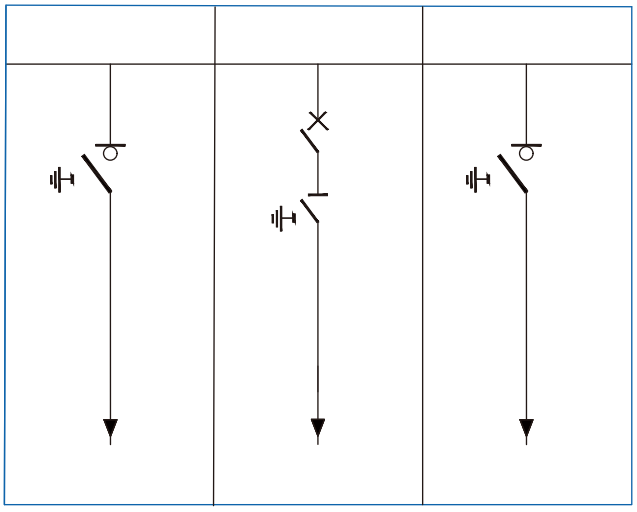
- Vacuum interrupter technology with charged spring mechanism to provide reliable breaking capability.
- An additional 3-position disconnector combined earthing switch to provide reliable isolation and earthing function.
- Logical mechanical interlocks design prevents incorrect operation between circuit breaker and disconnector.

SF6 gas insulated system

- All primary high-voltage components are completely enclosed in SF6 gas tank, free from environment impact, thus ensuring fully insulation and maintenance-free;
- SF6 gas tank is made of high-quality stainless steel materials, free from influence of salt spray, humidity, dirt and temperature, ensuring a durable nice outlook;
- With IP67 protection degree, can reliably prevent from flood immersion in summer;
- Advance gas shielded welding as well as a sealing pressure system of less than 1‰ leakage rate ensure a 30 year service cycle;
- Non-extensible is standard busbar extensible is optional.

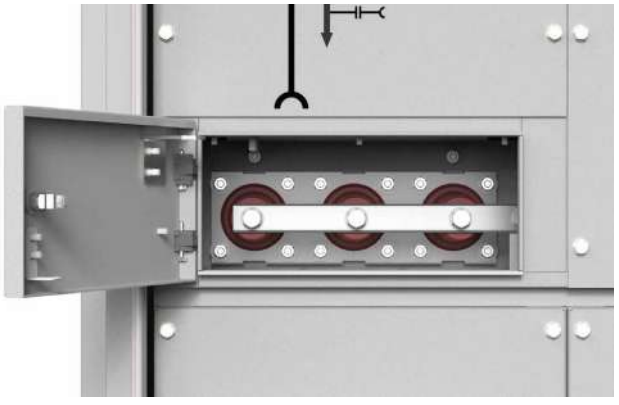
Product Features

Product appearance and scheme drawing



Cable test facility

Test bushings facility with independent door and mechanical interlock design with operation status.



RVAC Technical Data

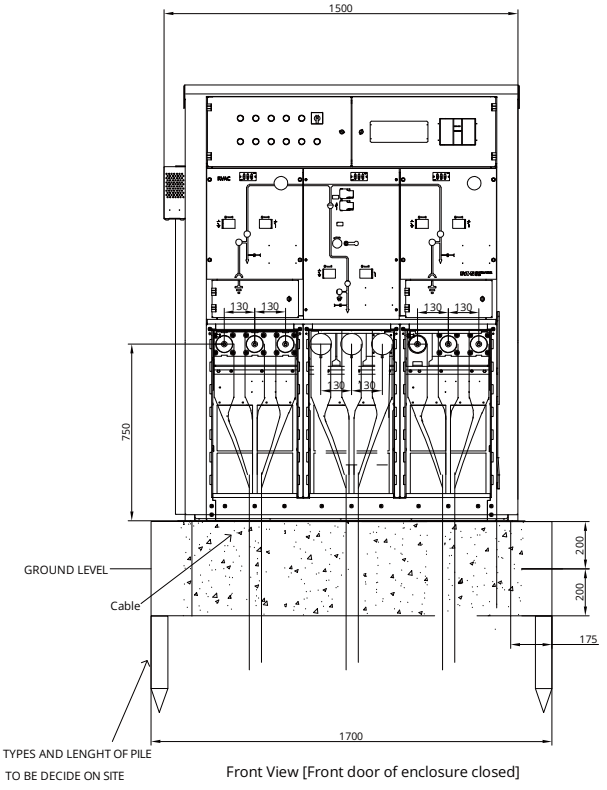
Item		Ratings
General		
Rated voltage	kV	17.5
Power frequency withstand voltage(1min)		
Phase to phase/Phase to earth	kV	38
Between isolating distance		48
Lightning impulse withstand voltage (BIL)		
Phase to phase/Phase to earth	kV	95
Between isolating distance		110
Rated frequency	Hz	60
Load break switches panel		
Rated normal current	A	400, 630
Rated short-circuit making current	kA	54.6kA
Rated short-time withstand current	kA-s	21kA-1
Mechanical endurance class (Lood break switch)		M1 5000 times
Mechanical endurance class (Earthing switch)		M1 3000 times
Electrical endurance class (active load breaking capacity 630A)		E3
Cable-charging breaking capacit	A	10
Circuit breakers panel		
Rated normal current	A	200, 630
Rated breaking current	kA	21
Rated short-time withstand current	kA-s	21-1
Rated short-circuit making current	kA	54.6
Mechanical endurance class(Circuit breakers)		M2 10000 times
Mechanical endurance class(Earthing switch)		M1 3000 times
Electrical endurance class		E2
Mechanism type		O-0.3s-CO-180s-CO

For others, please contact local Eaton sales representative.

RVAC designed to IEC standards

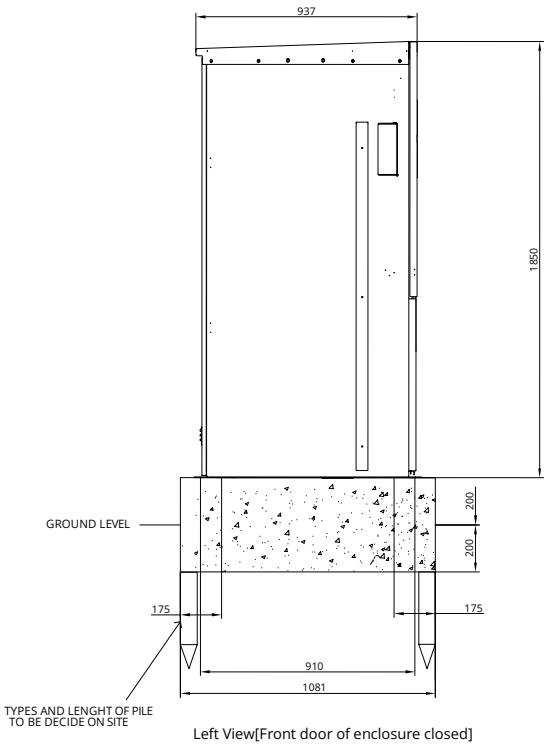
RVAC complies with the following standards	
IEC62271-1	Common specifications for high-voltage switchgear and controlgear IEC62271-
IEC62271-103	High-voltage switches for rated voltages above 1kV up to and including 52 kV
IEC62271-102	High-voltage alternating current disconnectors and earthinge switches
IEC62271-200	A.C. metal-enclosed switchgear and controlgear for rated voltages above 1kV and up to including 52kV
IEC62271-100	High-voltage alternating-current circuit breakers

RVAC KVK（Example) GA Drawing

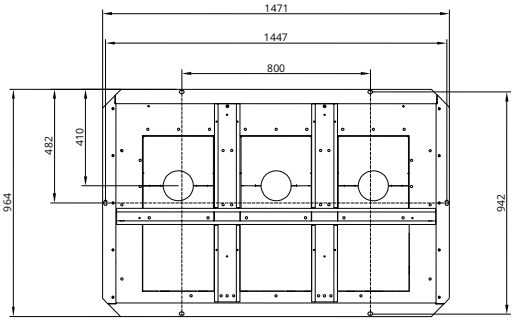


Front View [Front door of enclosure closed]

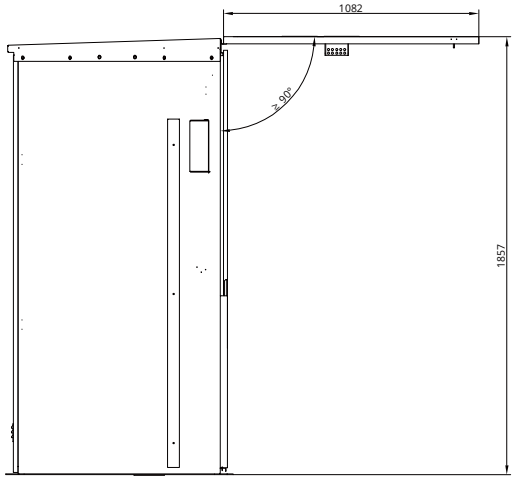
FRONT



Left View[Front door of enclosure closed]



BACK



Left View[Front door of enclosure open,remove the left side plate]

Eaton is an intelligent power management company dedicated to improving the quality of life and protecting the environment for people everywhere. We are guided by our commitment to do business right, to operate sustainably and to help our customers manage power — today and well into the future. By capitalizing on the global growth trends of electrification and digitalization, we're accelerating the planet's transition to renewable energy, helping to solve the world's most urgent power management challenges, and doing what's best for our stakeholders and all of society.

Eaton was founded in 1911 and has been listed on the New York Stock Exchange since 1923. We reported revenues of $20.8 billion in 2022 and serve customers in more than 170 countries. Eaton entered the Chinese market in 1993 and has grown significantly since then. In 2004, Eaton moved its Asia-Pacific headquarters from Hong Kong to Shanghai. Today, Eaton has nearly 9,000 employees and 20 manufacturing facilities in China. Eaton is marking its 100th anniversary of being listed on the New York Stock Exchange, and its 30th anniversary of being in Chinese market.

For more information about Eaton China, visit: **www.eaton.com.cn**
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