

RVD-145 Dead tank vacuum circuit breaker

Compact structure, small footprint
With high grade insulation level
Intelligent secondary control and monitoring
Substation installation



Comply with IEC/ANSI standards
Provided customized manufacture
Whole solutions for design, assembly, test...
Accountable solution for safety and reliability
Wide range offering, easy business and convenient installation



<https://www.cnrockwill.com>

Table of contents

About us / contact us	1
Summary	2
General description	3
Product structure	5
Main technical parameters	6
After-sale service	7
Dimensioned Outline	8



About us / Contact us

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Rockwill Group is one of the leading high technical enterprises professional deals in medium high voltage switchgear and components develop, manufacture and sales.

Located in Wengyang Industrial Zone, Wenzhou, used to known as Yueqing Real Electric Works (Registered in 1986), we have more than 20 years experiences in Medium & high voltage field. We strategically cooperate with worldwide high reputation medium& high voltage switchgear manufacturer and research institute, successfully developed series of medium voltage mutually; filled the blank in China.

We also teamed up with province grade intelligence high voltage switch laboratory, together developed new generation intelligence simultaneous technical vacuum switch, electronic current transformer, digital integrated substation etc. through the cooperation we obtain plenty achievements and build up experience technical team. Plentiful talent backup, advanced production equipment, perfect quality control system and reverse inspection procedure are powerful guarantee of our reliable product quality and high reputation.

We have always insisted the faith on grow together with customers, and to provide a safe, simply, green and efficient medium & high voltage switchgear and components.

ROCKWILL[®], China. Provide with best support.

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Summary

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ROCKWILL® Electric is committed to providing customers with cutting-edge technology, competitive pricing, and superior after-sales services to advance automated distribution. As the power industry evolves, the miniaturization of electrical equipment represents a key future trend and an urgent need for current power consumers. Miniaturized electrical equipment not only saves land and civil engineering costs but also reduces the use of greenhouse gases like sulfur hexafluoride (SF₆), thereby meeting ecological and environmental protection requirements. Leveraging years of extensive experience in high-voltage electrical design and incorporating globally advanced technical design philosophies, our company has developed the latest The RVD-145 Dead Tank Vacuum Circuit Breaker. This product is tailored for power utilities and enterprises pursuing high power supply reliability, advancing distribution automation upgrades, and operating in harsh environments. It serves not just as a simple line switch but as a critical component in building smart, resilient distribution grids.

Service environment

Air temperature: Maximum temperature: +55°C;
Minimum temperature: -50°C

Humidity: Daily average humidity 100%.

Above sea level: Maximum installation altitude: 1000m.

- 1, If it needs to be installed in plateau areas with an altitude higher than 1,000 meters, it is essential to consult with the manufacturer to take necessary measures to strengthen insulation during the ordering process.
- 2, When operating in an area with a temperature of -40°C, measures need to be taken to prevent SF₆ gas from liquefying.

The RVD-145 Dead Tank Vacuum Circuit Breaker, launched by ROCKWILL, is a gas-insulated switchgear with a voltage rating of up to 145 kV. Its core features include the use of clean air as the insulation medium combined with vacuum interruption technology, aiming to achieve zero greenhouse gas emissions and zero global warming potential in power transmission.

Core Features

- Eco-Friendly Technology, Zero Environmental Impact
 - 1) Zero SF₆ and other F-gases: Completely eliminates the use of traditional SF₆, a potent greenhouse gas.
 - 2) Zero greenhouse gas emissions: The insulation medium is clean air (80% nitrogen, 20% oxygen), which is safe and can be released directly into the atmosphere without contributing to the greenhouse effect.
 - 3) Zero GWP: Features a Global Warming Potential of zero.
- Safe and Reliable, Zero Health Risks
 - 1) Non-toxic insulation gas: Clean air is non-toxic and harmless, ensuring operator safety.
 - 2) No toxic decomposition products: The interruption process occurs in a vacuum, preventing the generation of harmful substances.
 - 3) No special safety measures required during maintenance: Thanks to the inherent safety of the gas.
 - 4) No gas disposal required at end-of-life: Simplifies the decommissioning process.
- Simple Operation, Zero Regulatory Burden
 - 1) No gas handling regulations or density checks: Eliminates the routine gas monitoring and maintenance required for SF₆ equipment.
 - 2) No gas reporting and accounting: Complies with and exceeds current and potential future legislation restricting F-gases.
 - 3) No F-gas related training: Reduces training costs and complexity.

- **Excellent Performance, Zero Compromise**

- 1) Proven technology: Based on over 40 years of experience in medium-voltage vacuum interruption technology and more than 10 years in high-voltage applications up to 145 kV.
- 2) High reliability: Delivers excellent interrupting performance at rated nominal current and rated short-circuit current without degradation.
- 3) Low maintenance costs: The vacuum interrupter is hermetically sealed and maintenance-free over its entire service life, resulting in low operational costs throughout the lifecycle.
- 4) Long service life: An expected lifetime of over 50 years and a first major inspection interval exceeding 25 years.
- 5) Wide applicability: Suitable for a broad ambient temperature range from -50°C to +55°C. The insulating medium carries no risk of liquefaction, making it particularly suitable for low-temperature applications. It can be installed both indoors and outdoors.

- **Optional LPIT**

Optional Low-Power Instrument Transformer (LPIT) combines voltage and current transformer functions in one device. A single unit meets both protection and measurement requirements, allows flexible installation, and helps reduce the equipment's size and weight.

- **Summary**

The RVD-145 Dead Tank Vacuum Circuit Breaker represents a significant shift in high-voltage switchgear towards greater environmental friendliness, safety, and cost-effectiveness. By utilizing clean air as a sustainable insulation solution, it completely eliminates dependence on climate-harmful F-gases without compromising high performance and reliability. It is an ideal choice for future-oriented grid infrastructure.

RVD-145 Dead tank vacuum circuit breaker

The product uses clean air as the insulation medium, completely replacing the traditional potent greenhouse gas sulfur hexafluoride (SF₆), making it a future-oriented, environmentally friendly high-voltage switchgear solution.

Product Structure Overview	
Structural Aspect	Key Components & Characteristics
Core Technology	Vacuum interrupter technology + Clean air insulation. This forms the foundation for achieving "zero harm.
Insulation Medium	Clean air (80% nitrogen, 20% oxygen), with a Global Warming Potential (GWP) = 0, non-toxic and harmless.
Key Components	<ol style="list-style-type: none"> 1. Vacuum interrupter chamber: Sealed design, maintenance-free for life. 2. Spring-operated mechanism: Mature and reliable technology. 3. Low-power instrument transformer (LPIT): Optional integration, combining voltage and current transformers into one unit, saving space.
Physical Structure	Modular design, available in standard and compact versions (with LPIT), suitable for indoor/outdoor installation.

Core Advantages Summary ("Zero" Series)

- Zero environmental impact: No SF₆, zero greenhouse gas emissions, GWP = 0.
- Zero health & safety risks: Insulation gas is non-toxic, produces no toxic decomposition by-products, and requires no special gas handling during maintenance or decommissioning.
- Zero regulatory burden: No need for gas handling, density checks, specialized training, or related reporting.
- Zero performance compromise: Based on decades of vacuum technology experience, ensuring high reliability and low lifecycle costs.

In summary, the product structure of this solution is built around the innovative core of clean air insulation, delivering high performance and reliability while entirely eliminating the environmental, safety, and compliance challenges associated with traditional GIS technology.

Technical data	
Item	Parameters
Rated voltage	145KV
Rated frequency	50/60Hz
Rated short-duration power-frequency withstand voltage (1 min)	275KV
Rated lightning impulse withstand voltage (1.2/50 us)	650KV
Rated continuous current- bus bar / feeder bus coupler	3150A
Rated short-circuit breaking current	50KA
Rated peak withstand current	135KA
Rated short-time withstand current (up to 3 s)	50KA
Leakage rate per year and gas compartment (type tested)	<0.1%
Drive mechanism of circuit-breaker	stored energy spring
Rated operating sequence	0-0.3 s-C0-3 min-C0 C0-15 s-C0
interrupter technology	vacuum
Insulation medium	clean air
Weight of SF6 or other fluorinated green-house gases	0 kg
Rated filling pressure	0.8 MPa (abs.)
Bay width common pole drive	1000 mm
Bay height depth (depending on bay arrangement)	3.200/5,500 mm
Bay weight (depending on bay arrangement)	6.0t
Ambient temperature range	-50°C +55°C
Installation	Indoor/outdoor
First major inspection	> 25 years
Expected lifetime	> 50 years
Standards	IEC/IEEE



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After-sale service

Field service operation and warranty issues:

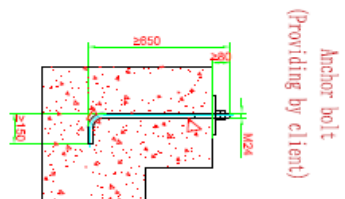
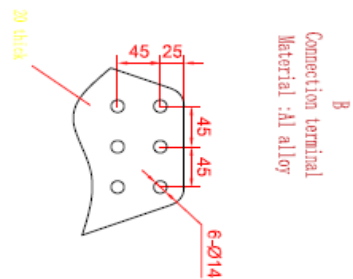
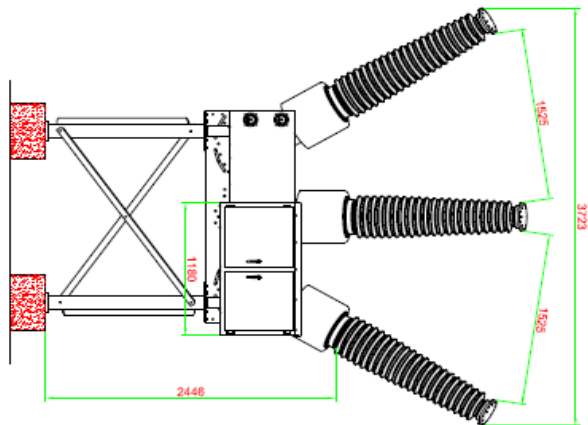
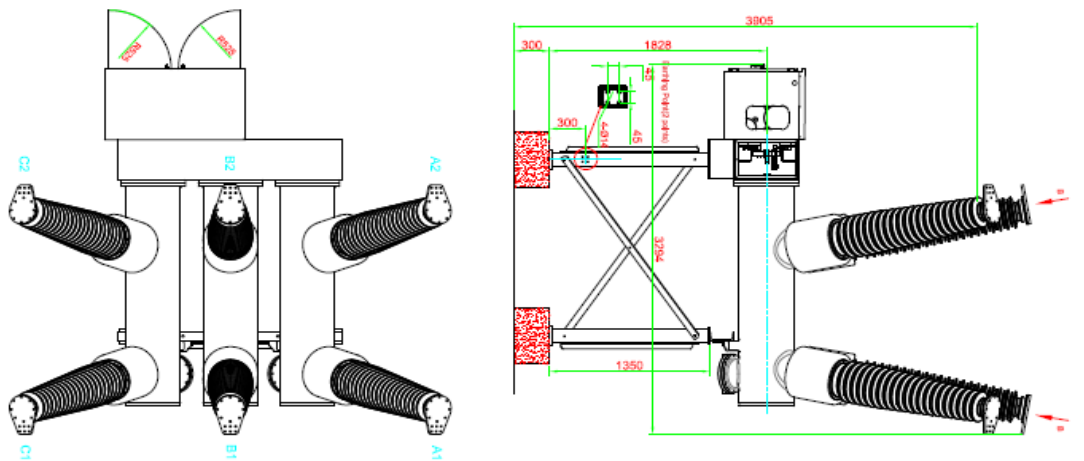
ROCKWILL® can provide competent, well trained field service representatives to provide technical guidance and advisory assistance for the installation, overhaul, repair and maintenance of ROCKWILL® equipment, processes and systems.

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WENZHOU ROCKWELL ELECTRIC CO., LTD.



BOARD: 6 SEATED 20/01/16
 SEATED BY: ☒ JG AUSTIN ☐ PETER
☐ AUSTIN ☒ AUSTIN ☐ AUSTIN
 SEATED BY: ☐ AUSTIN ☐ AUSTIN

APPROVED BY :		TITLE			
RVD-145					
REVISED					
DATE :					
DESIGNED & CHECKED BY :					
APPROVED :					
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