

DHS

24kV Outdoor AC metal-enclosed Dead Tank Switchgear



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Product Introduction

- DHS is designed with a complete series.
- DHS is of safety, reliability and widely applied switchgear
- DHS is outdoor installation with fixed type equipped with VEP vacuum circuit breaker of indoor fixed type.
- DHS is in housing of 3mm welded stainless steel sheet with protective class IP55.
- DHS adopts straight-through transformer structured by high precision and high-performance
- DHS is fitted with a reliable pressure relief arrangement to ensure safety for people and equipment.

DHS outdoor AC metal-enclosed switchgear is developed by Xiamen Huadian Switchgear Co., Ltd. under the leadership by senior Chinese and German switchgear experts. The product quality has reached global advanced level and has successfully passed complete type tests held by National High-Voltage Apparatus Quality Inspection Center.

DHS is comprised of circuit breaker, transformer, stainless steel enclosure, busbar, bushing and secondary equipment etc., and is able to provide functions with control, measurement, alarm, protection etc.

DHS outdoor AC metal-enclosed switchgear is designed in full compliance to IEC standards, and is equipped with the specification of VEP indoor medium-voltage embedded pole vacuum circuit breaker.

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Overview

DHS outdoor AC metal-enclosed switchgear is especially suitable for application in substation, mine and petro-chemical industry and other similar fields.



High-performance

- Metallic enclosure, in complete earthing high-voltage isolated chamber, meet IP55 to minimize operational accident.
- The housing is made of 3mm stainless steel sheet through static coating after bending operation, so it is of strong corrosion resistance and sufficient mechanical strength in addition to pleasant appearance.
- The low-voltage chamber and high-voltage chamber are isolated by stainless steel sheet to ensure reliability of relay action for protection purpose.
- The busbar is wrapped with high-performance heat-shrinkable tubing featured by high-dielectric strength, and the poles have been optimized to improve electric-field distribution inside the cabinet.
- It adopts VEP indoor medium-voltage embedded pole vacuum circuit breaker to achieve high reliability and excellent electric performance.
- The front panel of the switchgear is designed with an observed window with double layers glass containing a certain air gap inside, so that it is able to withstand internal arc fault while the switching status of breaker is being observed outside the panel.
- The mounting stand is used to support and fix the enclosure and provides excellent strength, grounding and corrosion resistance as well. The mounting stand is made of hot galvanized welded angle steel, which is of good corrosion resistance and strength in addition to easy installation.
- DHS is designed with complete preventions and reliable mechanical lock against misoperation. The front door can only be opened when the circuit breaker is in OFF position.
- The straight-through transformer can effectively increase the air gap between charged components in the cabinet as well as creepage distance, and it is easy to install and use.

VEP indoor medium-voltage embedded pole vacuum circuit breaker

- VEP is the 3rd-generation medium-voltage embedded pole vacuum circuit breaker jointly developed by Chinese and German experts.
- Embedded pole with cutting-edge vacuum interrupting technology
- The embedded pole of circuit breaker in fixed installation is in life-time free of maintenance.
- Reliable modularized spring operation mechanism for the circuit breaker is outside the high-voltage chamber and is easy for maintenance.
- The circuit breaker can be operated manually or by motor.
- VEP adopts standard switching on/off functional modules which are effective to reduce the type and number of spare parts, and make it possible for part replacement or maintenance on site, reducing downtime significantly.
- VEP secondary control circuit board is also modularly designed with self-snapping plug for electric connection, which facilitates replacement as well as reliability of electric connection.

Technical parameters of DHS

Item	Name		Unit	Data
1	Rated voltage		kV	24
2	Rated frequency		Hz	50
3	Rated insulation level	Rated line frequency withstand voltage (1m In)	kV	50
		Rated lightning impulse withstand voltage (peak)		150
4	Rated current		A	800
				1250
				1600
				2500
5	Rated short-time withstand current (4s)		kA	25
6	Rated peak withstand current			63
7	Short-time line frequency withstand voltage of auxiliary circuit and control circuit (1min)		kV	2
8	Rated voltage of auxiliary circuit and control circuit		V	DC/AC230
9	Primary circuit resistance		$\mu\Omega$	≤ 100
10	Protection class	Enclosure	P55	
		Internal chamber	P2X	
11	Internal fault		25kA/1s	
12	Electro-Magnetic Compatibility (EMC)		Class III severity	

Remarks: All technical parameters are obtained strictly from type test data instead of theoretical calculation.

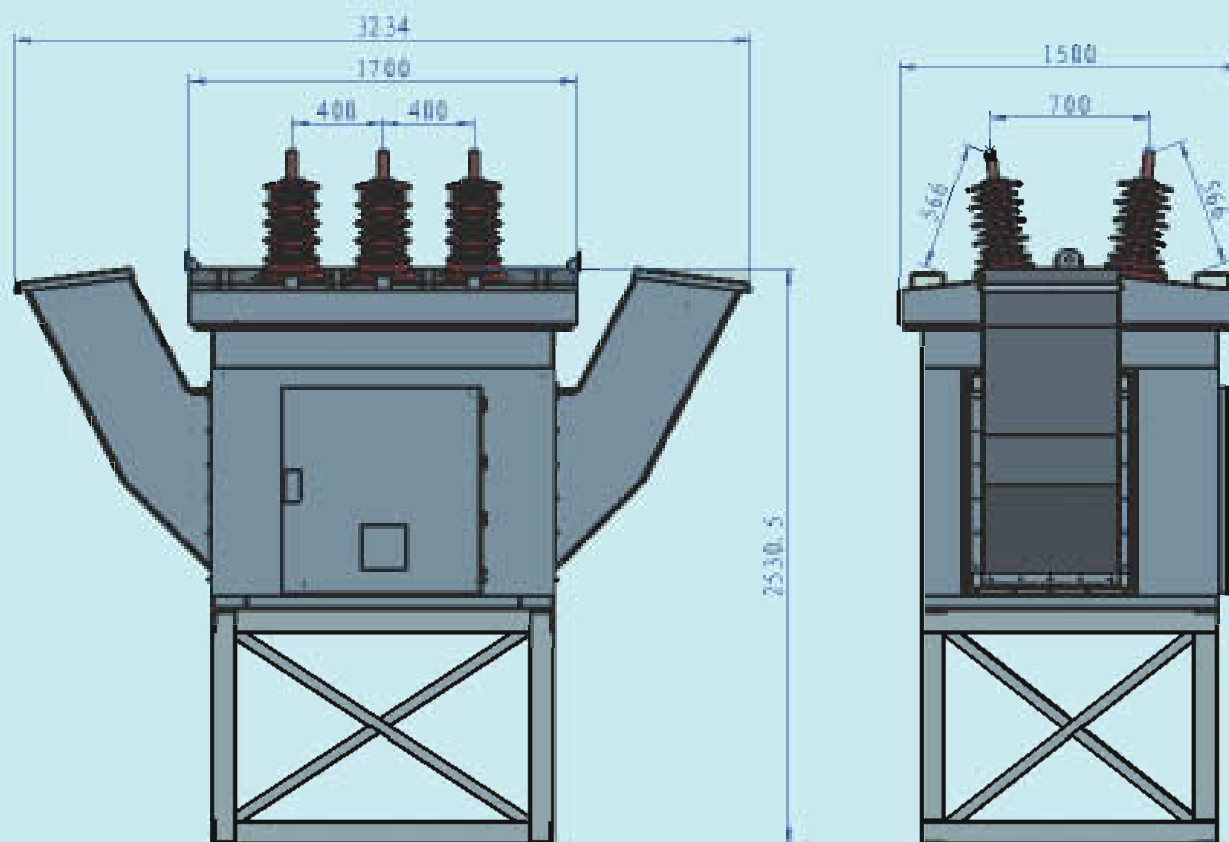
Technical data of VEP vacuum circuit breaker

Item	Name		Unit	Data
1	Rated voltage		kV	24
2	Rated frequency		Hz	50
3	Rated insulation level	Rated short-time line frequency withstand voltage (1m h)	kV	50
4		Rated lightning impulse withstand voltage (peak)		150
5	Rated current		A	800
				1250
				1600
				2500
6	Rated short-circuit breaking current		kA	25
7	Rated short-time withstand current (4s)			25
8	Rated short-circuit making current			63
9	Rated peak withstand current (peak)			63
10	Rated line charging current breaking/making test		A	10
11	Breaking cycles of short-circuit breaking current (in compliance to E2 level)		Cycle	E2
12	Breaker class		-	S2
13	Mechanical service life		Cycle	10000
14	Rated operation sequence			O-0.3s-CO-180s-CO
15	Partial discharge		pC	≤ 5

Remarks: All technical parameters are obtained strictly from type test data instead of theoretical calculation.

Dimension of DHS

Dimension of DHS



Ordering instructions

Ordering instructions

The user must indicate the following information upon ordering:

- DHS types, names;
- Main wiring diagram and electrical system diagram, rated voltage, rated current, rated short-circuit breaking current and required ordering quantity;
- The type, specification and quantity of main electrical components in DHS;
- Other particular requirements.

Spare parts and auxiliary materials

■ Enclosed documentation usually includes:

- a. Product certificate and manufacturer's inspection report upon delivery;
 - b. Installation and operation manual;
 - c. Packing list.
- Accessories
- a. Manual energy accumulation lever for circuit breaker
 - b. Other accessories.

Operation conditions

Normal operation conditions

- a) Ambient temperature $+40^{\circ}\text{C} \sim -25^{\circ}\text{C}$, daily average temperature $\leq 35^{\circ}\text{C}$;
- b) Humidity: Daily average humidity $\leq 95\%$, daily average vapor pressure $\leq 2.2\text{kPa}$; Monthly average humidity $\leq 90\%$, monthly average vapor pressure $\leq 1.8\text{kPa}$;
- c) Wind speed: $\leq 34\text{m/s}$, solar radiation: $\leq 1100\text{W/m}^2$;
- d) Sea level elevation $\leq 1800\text{m}$;
- e) No apparent pollution of dust, smoke corrosive/combustible gas, vapor or salt mist in environmental air;
- f) No severe contamination and frequent strong vibration;
- g) Amplitude of electro-magnetic disturbance sensed by secondary system is $\leq 1.6\text{kV}$.

Special operation conditions

If operation is beyond normal environmental conditions as specified in IEC 62271-1: 2011 and above normal conditions, the user must consult with the manufacturer.

