

Hybrid Gas-Insulated Switchgear (HGIS)

Company & Product Presentation

China State Grid | Pinggao Group

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01

COMPANY INTRODUCTION

Henan Pinggao Electric Co., Ltd. is a listed company controlled by Pinggao Group, a subsidiary of State Grid Corporation of China.

A leading provider of HV, EHV and UHV AC/DC switchgear with strong capabilities in R&D, manufacturing and supply.

Widely applied in key power projects and exported to over 40 countries.



Advanced Technology
Strong R&D Capabilities



Global Presence
Exported to 40+ Countries



HV Switchgear Specialist
AC/DC Switchgear Solutions

02

GLOBAL PROJECT REFERENCES

HGIS | GIS | CB

PROJECTS IN EUROPE

Country	Client	Rated Voltage (kV)	Product	Qty.	Unit
Spain	EDISTRIBUCIÓN	145	HGIS SB	26	bay
	EDISTRIBUCIÓN	145	HGIS Y2	6	bay
	SEIT	145	HGIS SB	12	bay
	SEIT	72.5	HGIS SB	3	bay
	SEIT	145	Circuit Breaker	3	unit
	EDISTRIBUCIÓN	145	Circuit Breaker	81	unit
	SEIT	72.5	Circuit Breaker	1	unit
	EDISTRIBUCIÓN	72.5	Circuit Breaker	15	unit
	SEIT	145	GIS	10	bay
North Macedonia	Elektrani na Severna Makedonija	145	GIS	3	lot
Poland	Polskie Sieci Elektroenergetyczne	400	GIS	5	lot
		145	GIS	1	lot
		252	GIS	1	lot



- ✓ Spain is the core market, with over 140 units delivered.
- ✓ Wide voltage coverage from 72.5 kV to 400 kV
- ✓ Trusted by major European utilities

PROJECTS IN ASIA & MID-EAST

Country	Client	Rated Voltage (kV)	Product	Qty.	Unit
Kazakhstan	Syrian Petroleum Company	72.5	GIS	9	bay
Laos	Electricité du Laos	145	GIS	7	lot
Nepal	Nepal Electricity Authority	145	GIS	5	lot
		72.5	GIS	2	lot
		252	GIS	9	lot
Syria	Public Establishment for Transmission and Distribution of Electricity	145	GIS	163	bay
Iran	SAINA RAMHORMOZ POWER GENERATION CO.	400	GIS	1	lot
India	Power Grid Corporation of India	400	GIS	2	lot
		400	GIS	47	bay
Ethiopia	Ethiopian Electric Power	252	GIS	1	lot
Pakistan	National Transmission & Despatch Company	145	GIS	5	lot



- ✓ Strong presence across Asia and Middle East
- ✓ Large-scale projects in Syria
- ✓ Capability in delivering projects globally

03

HGIS PRODUCT OVERVIEW

Hybrid Gas-Insulated Switchgear (HGIS)

Product Definition & Positioning

Hybrid Gas-Insulated Switchgear (HGIS)

72.5kV / 145kV / 170kV / 252kV

- Combines advantages of GIS and AIS
- High reliability and compact design
- Reduced SF₆ consumption, more environmentally friendly
- Widely applied in power utilities and substation projects



Hybrid Gas-Insulated Switchgear (HGIS)

Core Technical Features



Modular Design

Flexible and independent primary modules for various substation configurations.



Compact & Lightweight

Up to 55% space saving compared to AIS.



High Reliability

Factory pre-assembled and tested, minimizing on-site installation and commissioning.

Core Technical Features



Flexible Switching Capability

Capable of switching capacitive and inductive small currents.



Bus Transfer Capability

Supports bus transfer current switching.



Reduced SF₆ Consumption

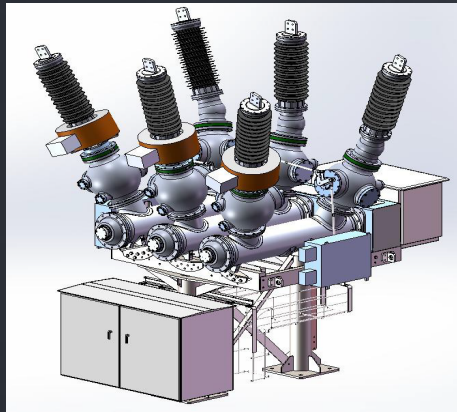
Less than 50% of GIS, reducing environmental impact and operating cost.

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HGIS PRODUCT DETAILS

72.5kV | 145kV | 252kV

Product Series Overview



72.5kV Series

ZHW1B-72.5(L)/T3150-40



145kV Series

ZHW1B-145(L)/T3150-40



252kV Series

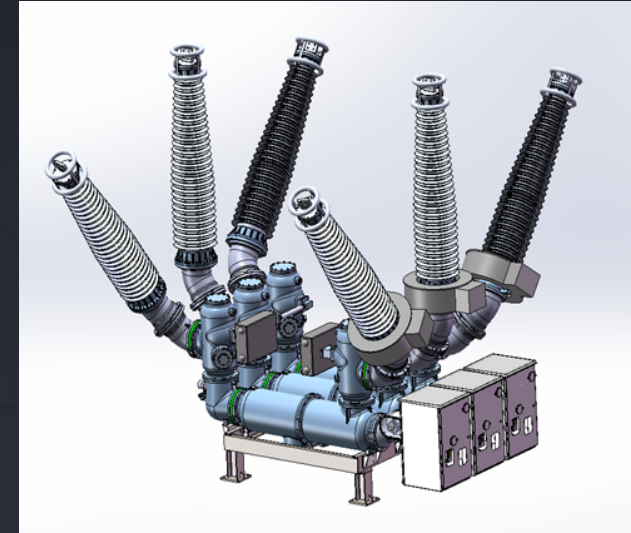
ZHW1-252(L)/T3150-40

Model:

ZHW1B-252(L)/T3150-40

Configuration:

- Single Bus
- Double Breaker
- Double Bus (derived from double-breaker scheme)

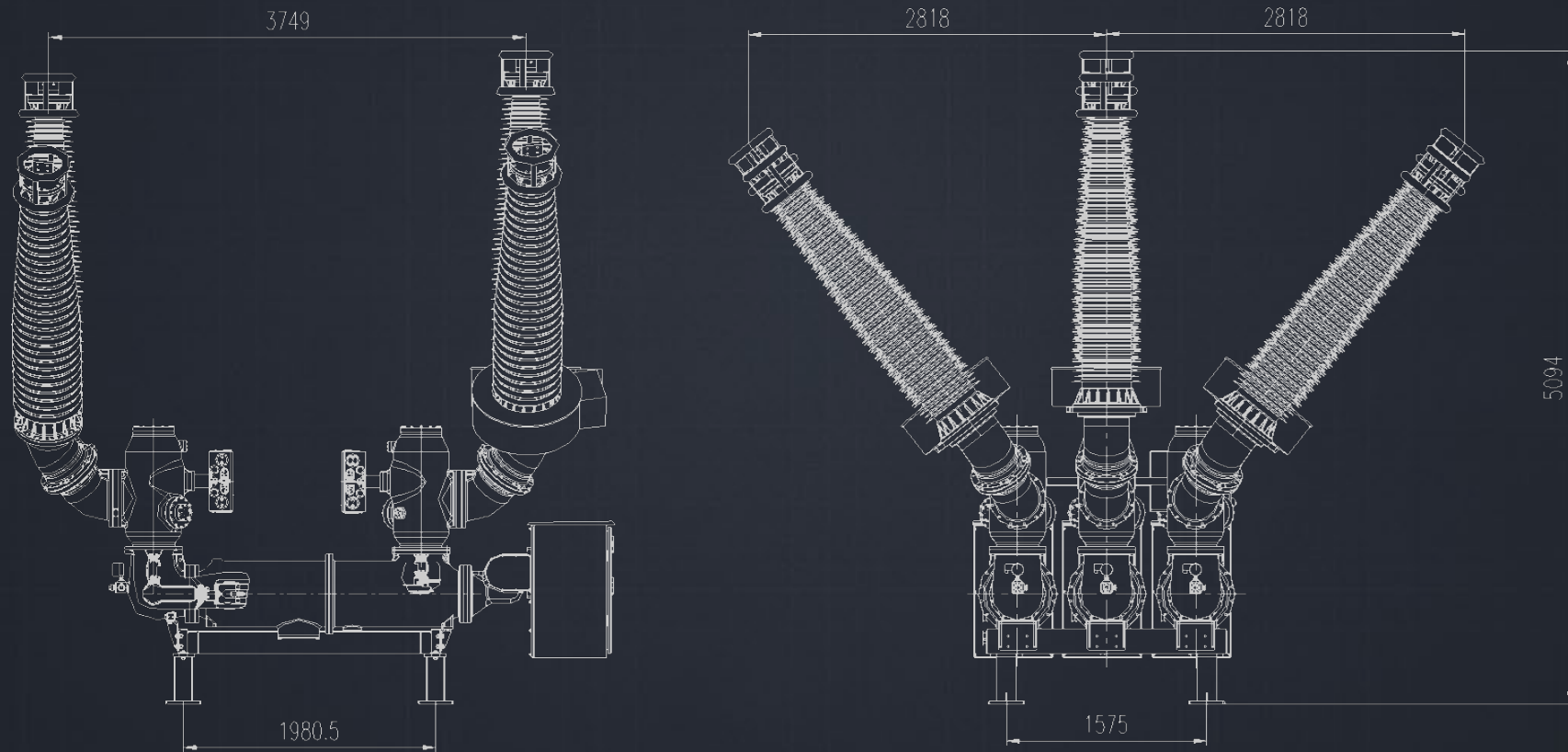


Single Bus Configuration

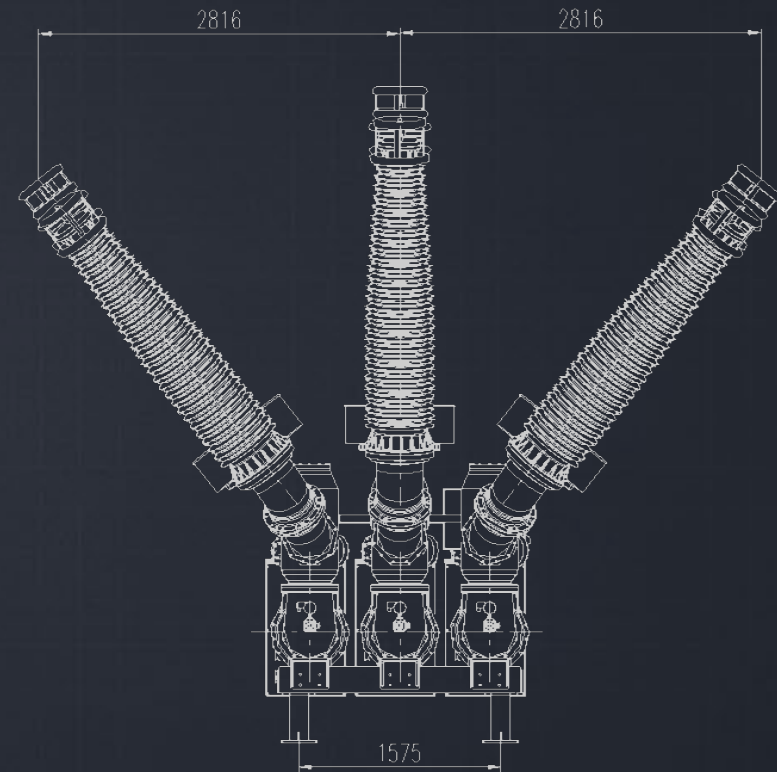
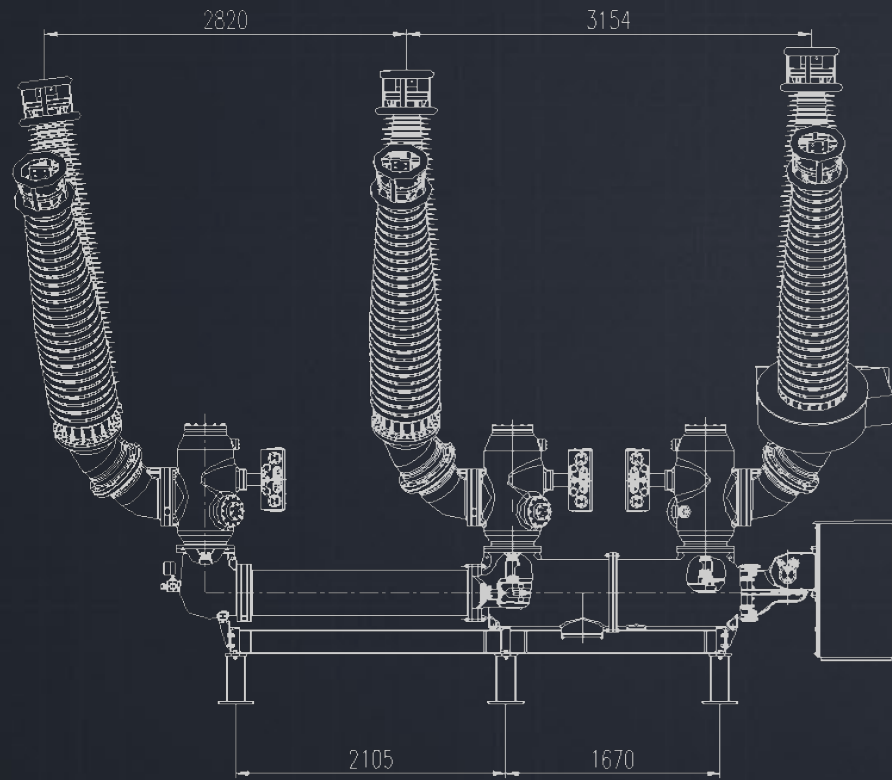


Double-Breaker Configuration

252kV - Overall Dimensions



252kV - Overall Dimensions



252kV - Main Components



1. Bushings (Porcelain or Composite)
2. Three-position Disconnector (DS/ES)
3. Three-position disconnector (DS/ES)
operating mechanism
4. Circuit Breaker (CB)
5. Support Frame
6. Circuit Breaker Operating Mechanism
7. Outdoor Current Transformer (CT)

252kV - Technical Parameters

Item	Unit	Value
		ZHW1-252
Rated Frequency	Hz	50 / 60
Rated Current	A	4000
Altitude	m	≤ 2000
Ambient Temperature	°C	-45 to +50
Pollution Level		Class IV
Seismic Level		AG5
Rated Short-Time Withstand Current	kA	40
Short-Circuit Duration (Main / Earth)	s	3
Circuit Breaker Classification		E2-C2-M2
Disconnecter Classification		M2
Earthing Switch Class		E1-M2-B
Power Frequency Withstand Voltage (Across Open Contacts)	kV	460 (+146)
Lightning Impulse Withstand Voltage (Across Open Contacts)	kV	1050 (+206)
Bus Transfer Current / Voltage (Disconnecter)	A / V	1600 / 300

Model:

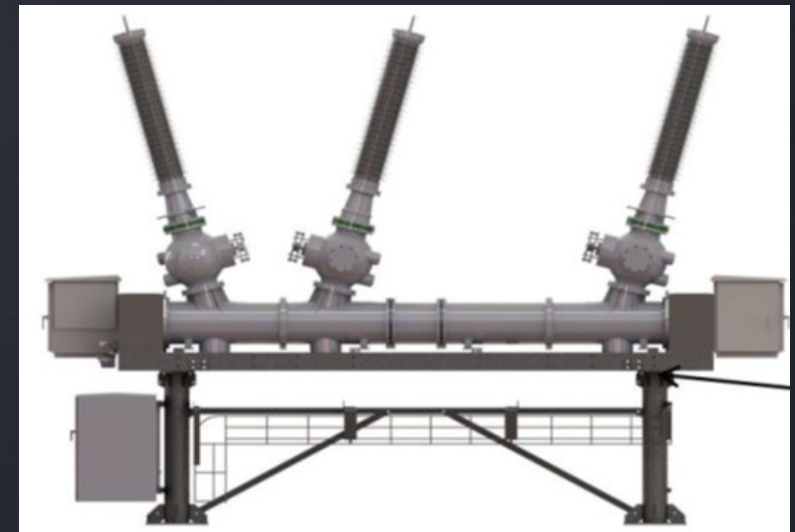
ZHW1B-145(L)/T3150-40

Configuration:

- Single Bus
- Double Breaker
- Double Bus (derived from double-breaker scheme)

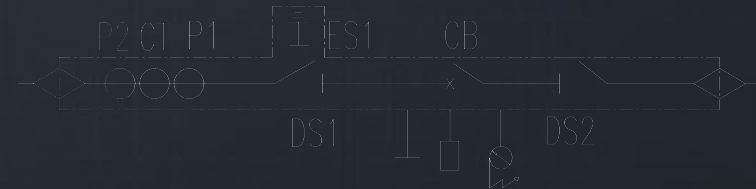
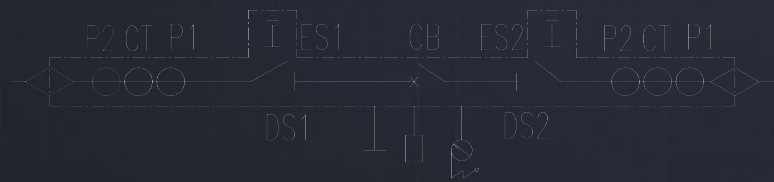
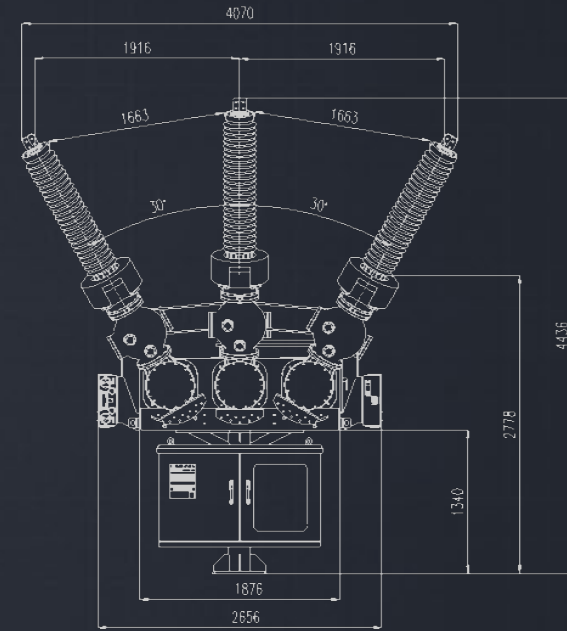
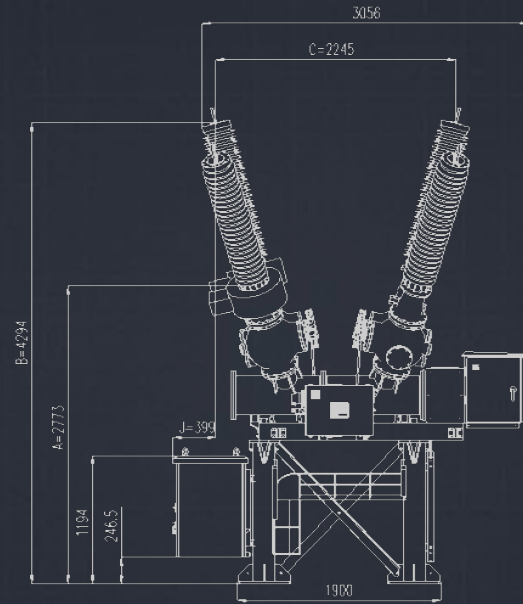
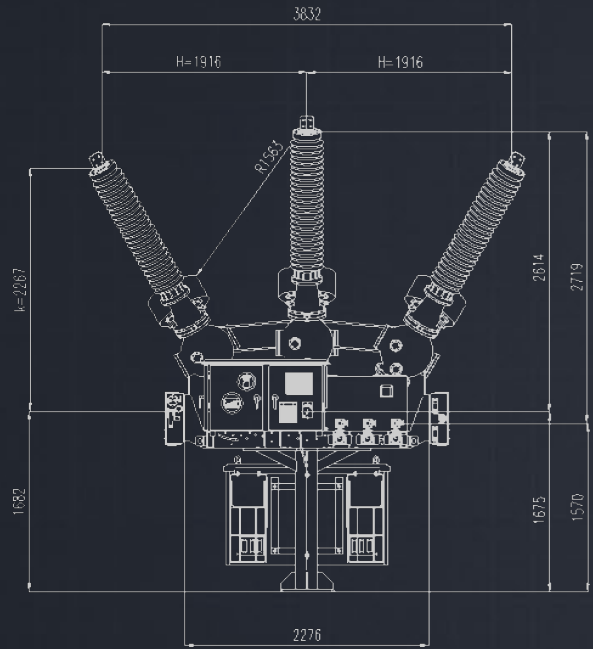


Single Bus Configuration

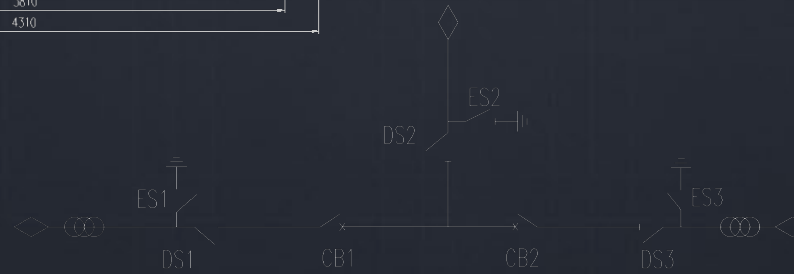
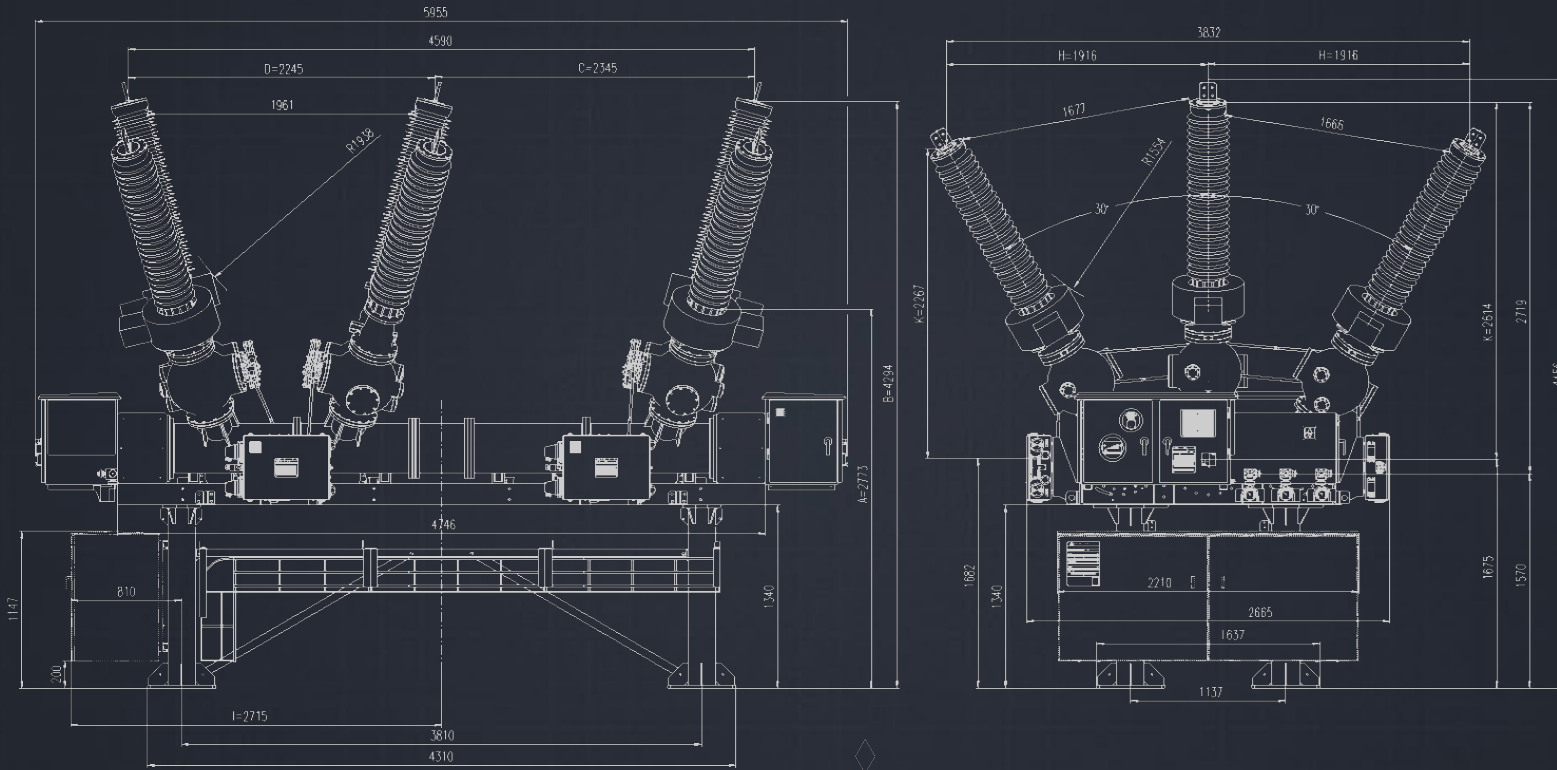


Double-Breaker Configuration

145kV - Main Circuit Diagram & Dimensions



145kV - Main Circuit Diagram & Dimensions



145kV - Main Components



1. Bushings (Porcelain or Composite)
2. Outdoor Current Transformer (CT)
3. Three-position Disconnectors (DS/ES)
4. Circuit Breaker (CB)
5. Three-position disconnectors (DS/ES)
operating mechanism
6. Local Control Cabinet
7. Support Frame
8. Cable Compartment
9. Circuit Breaker Operating Mechanism

145kV - Technical Parameters

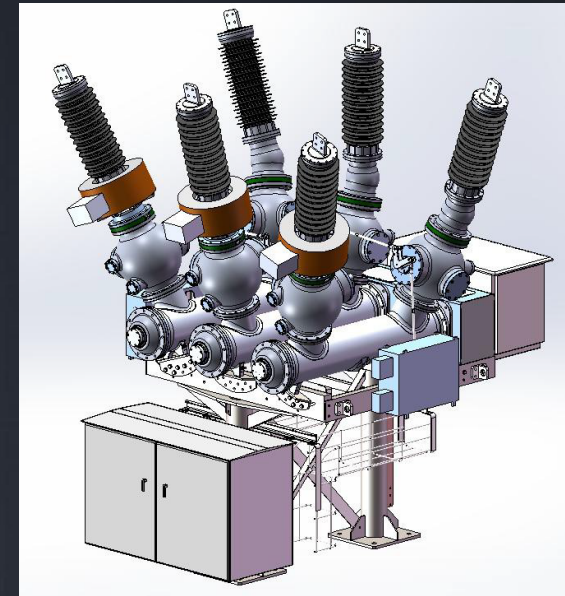
Item	Unit	Value
		ZHW1B-145
Rated Frequency	Hz	50 / 60
Rated Current	A	2500 / 3150
Altitude	m	≤ 1000
Ambient Temperature	°C	-45 to +50
Pollution Level		Class IV
Seismic Level		AG5
Rated Short-Time Withstand Current	kA	40
Short-Circuit Duration (Main / Earth)	s	3
Circuit Breaker Classification		E2-C2-M2
Disconnecter Classification		M2
Earthing Switch Class		E1-M2-B
Power Frequency Withstand Voltage (Across Open Contacts)	kV	315
Lightning Impulse Withstand Voltage (Across Open Contacts)	kV	750
Bus Transfer Current / Voltage (Disconnecter)	A / V	1600 / 100

Model:

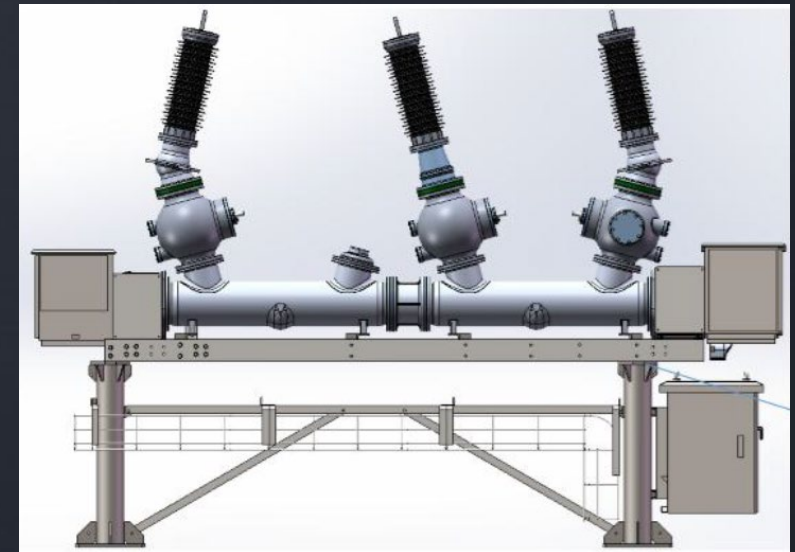
ZHW1B-72.5(L)/T3150-40

Configuration:

- Single Bus
- Double Breaker
- Double Bus (derived from double-breaker scheme)

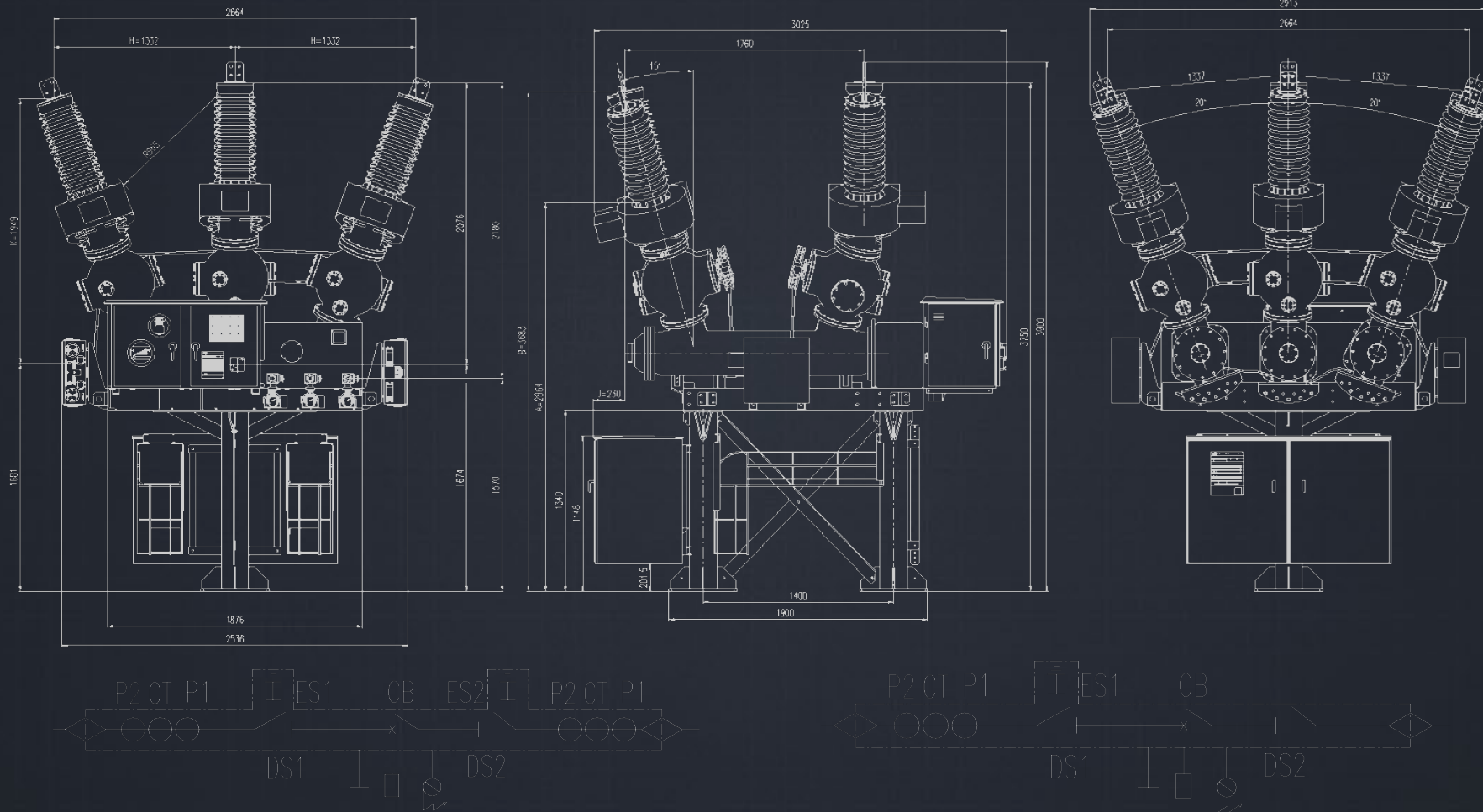


Single Bus Configuration

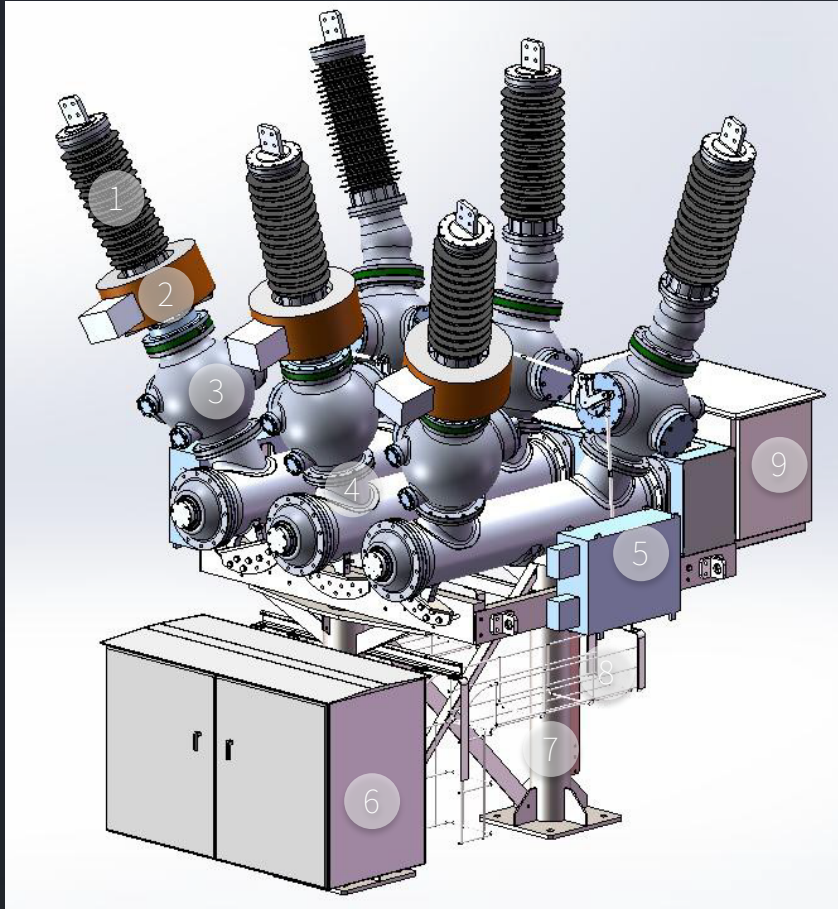


Double-Breaker Configuration

72.5kV - Main Circuit Diagram & Dimensions



72.5kV - Main Components



1. Bushings (Porcelain or Composite)
2. Outdoor Current Transformer (CT)
3. Three-position Disconnectors (DS/ES)
4. Circuit Breaker (CB)
5. Three-position disconnectors (DS/ES)
operating mechanism
6. Local Control Cabinet
7. Support Frame
8. Cable Compartment
9. Circuit Breaker Operating Mechanism

72.5kV - Technical Parameters

Item	Unit	Value
		ZHW1B-72.5
Rated Frequency	Hz	50 / 60
Rated Current	A	2500 / 3150
Altitude	m	≤ 1000
Ambient Temperature	°C	-45 to +50
Pollution Level		Class IV
Seismic Level		AG5
Rated Short-Time Withstand Current	kA	40
Short-Circuit Duration (Main / Earth)	s	4 / 2
Circuit Breaker Classification		E2-C2-M2
Disconnecter Classification		M2
Earthing Switch Class		E1-M2-B
Power Frequency Withstand Voltage (Across Open Contacts)	kV	160 (+42)
Lightning Impulse Withstand Voltage (Across Open Contacts)	kV	380 (+59)
Bus Transfer Current / Voltage (Disconnecter)	A / V	1600 / 100



THANK YOU

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