

ZGS American Type Substation Compact Substation



Model:	ZGS
OEM and ODM Services:	Available
Enclosure:	PINEELE standard
Brand:	PINEELE, a Brand Under ZHENGXI
Form:	All- packaged Type
Scope of Application:	Urban Power Distribution / Industrial Power Systems / Renewable Energy Integration / Infrastructure Projects / Oil & Gas Sector
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Introduction

The **ZGS Series American Type Prefabricated Substation** is an advanced, compact, and cost-effective power distribution solution designed for urban and rural power distribution networks. Manufactured by **Shenheng Power Equipment Co., Ltd.**, this substation integrates **high-voltage control, protection, power transformation, and distribution** into a single unit.

This prefabricated Compact Substation guide features an **oil-immersed transformer**, where the **high-voltage load switch and fuse** are installed directly inside the transformer oil, reducing external components and enhancing safety and efficiency. Its compact design and high performance make it ideal for **power plants, industrial areas, commercial buildings, and urban infrastructure projects**.

Key Features

- ✓ **Compact Structure** – The ZGS substation occupies **1/3 to 1/5** of the space required by a conventional European-style substation of the same capacity.
- ✓ **Fully Sealed and Insulated** – Eliminates the need for insulation clearance, ensuring personnel safety.
- ✓ **Flexible High-Voltage Connection** – Can be used in both **looped network** and **terminal** configurations for enhanced reliability.
- ✓ **High-Performance Transformer** – Features **low loss, low noise, high overload capacity, strong impact resistance, and excellent short-circuit resistance**.
- ✓ **Multiple Cable Connection Options** – Supports both **200A elbow connectors** and **600A T-type fixed cable connectors**, with optional ZnO lightning protection.

Technical Specifications

PARAMETER	SPECIFICATION
Model	ZGS
Form	All-Packaged Type
Operation Voltage	High Voltage
Size	1 Unit
Application Range	Power Plants, Urban & Rural Power Distribution
Shell Material	Stainless Steel
Shell Protection Grade	IP43
Brand	CHSH
Ambient Temperature	-35°C to +40°C
Altitude	No More Than 1000m
Rated Capacity	50-1600kVA
Noise Level	≤50dB
Certificates	CE / ISO Certified
Key Features	Compact, Cost-Effective, High Flexibility, Low Maintenance
Frequency	50Hz / 60Hz
Rated Voltage	Up to 35kV
OEM Service	Available
Transport Package	Iron Case / Wooden Case
HS Code	8537209000
Production Capacity	100 Pieces / Week

Advantages of ZGS Prefabricated Substation

1. Space-Saving & Compact Design

- The ZGS series substation is significantly smaller compared to traditional European-style substations.
- Ideal for **urban environments** where space constraints are a concern.

2. Fully Sealed & Insulated for Safety

- The entire structure is **fully insulated and sealed**, ensuring no insulation clearance is required.
- Enhances personnel safety by preventing direct contact with live electrical components.

3. Versatile High-Voltage Wiring

- Supports both **looped network and terminal configurations**, providing **greater reliability and flexibility** in power distribution.

4. High-Performance Transformer

- **Low Loss & High Efficiency** – Reduces energy wastage and ensures **cost-effective operation**.
- **Low Noise & Low Temperature Rise** – Ideal for noise-sensitive environments like **commercial buildings and residential areas**.
- **High Overload Capacity** – Allows for stable operation even under **heavy electrical loads**.
- **Strong Short-Circuit Resistance** – Enhances the transformer's ability to handle electrical faults.

5. Dual Cable Connection Options

- **200A elbow connector** (compatible with load plug, acts as an insulation switch).
- **600A T-type fixed cable connector**, supports **optional ZnO lightning arresters** for enhanced protection.

Environmental Conditions

The ZGS Prefabricated Substation is built to withstand **various environmental conditions**, ensuring **long-term durability and reliability**.

ENVIRONMENTAL FACTOR	SPECIFICATION
Ambient Temperature	-25°C to +40°C
Altitude	≤1000m
Relative Humidity (Daily Avg.)	≤95%
Relative Humidity (Monthly Avg.)	≤90%
Water Vapor Pressure (Daily)	≤2.2 kPa
Water Vapor Pressure (Monthly)	≤1.8 kPa
Seismic Resistance	≤8 Magnitude
Maximum Wind Speed	≤35m/s
Installation Requirements	No fire, explosion hazards, or chemical corrosion

Applications of ZGS American Type Substation

The ZGS series compact substation is widely used in **various power distribution systems** due to its **small footprint, high flexibility, and ease of installation**.

Common Application Scenarios

- **Urban Power Distribution** – Ideal for **residential areas, shopping malls, hospitals, airports, and railway stations**.
- **Industrial Power Systems** – Suitable for **factories, manufacturing plants, and industrial parks**.
- **Renewable Energy Integration** – Used in **solar farms and wind energy substations** to efficiently step up or step down voltages.
- **Infrastructure Projects** – Applied in **metro stations, highways, tunnels, and underground power networks**.
- **Oil & Gas Sector** – Used in **drilling platforms and refineries** requiring a reliable power source.

Customization Options

We can **custom-manufacture ZGS substations** according to customer requirements:

Custom Voltage Levels (Up to 35kV)

Transformer Capacity (From 50kVA to 1600kVA)

Different Cable Connection Types

Optional Lightning Protection Devices

Tailored Housing Materials – Stainless Steel, Composite Non-Metal, Aluminum Alloy

Our engineering team can **design and fabricate solutions** tailored to meet **specific project demands**.

Related products



500 kVA Compact Substation



11kV Compact Substation



1000 kVA Compact Substation



Compact Substation TNB



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