



# 1000 kVA Compact Substation

<b>Model:</b>	1000 kVA
<b>OEM and ODM Services:</b>	Available
<b>Enclosure:</b>	PINEELE standard
<b>Brand:</b>	PINEELE, a Brand Under ZHENGXI
<b>Form:</b>	All- packaged Type
<b>Scope of Application:</b>	Suitable for industrial power distribution, voltage stabilization, and transformer protection. Widely used in commercial buildings, manufacturing plants, and utility substations.
<b>Reviewed By:</b>	Zheng Ji, Senior Electrical Engineer at PINEELE 18+ years of experience in HV switchgear design & testing.
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## Product Overview

A **1000 kVA Compact Substation**—also known as a **Packaged Substation** or **Unitized Substation**—is a fully enclosed modular unit that integrates a **1000 kVA distribution transformer**, **medium-voltage switchgear**, and **low-voltage distribution panel** within a single weatherproof enclosure. Designed for fast deployment, space efficiency, and operational safety, this type of substation is ideal for urban, commercial, and industrial applications.



## European box substation

### The following information is required when ordering:

1. Model and quantity of substation
2. Model and quantity of transformer
3. High-voltage and low-voltage primary wiring scheme and the main components of the model and parameters
4. Shell material and color

It provides a safe and reliable interface between medium-voltage (typically 11kV or 22kV) and low-voltage (400V) networks.

## Key Specifications

SPECIFICATION	DETAILS
Rated Power	1000 kVA
Primary Voltage	11 kV / 22 kV / 33 kV
Secondary Voltage	400 V / 230 V
Frequency	50 Hz / 60 Hz
Transformer Type	Oil-immersed (ONAN) or Dry-type
Cooling Type	ONAN (Oil Natural Air Natural)
Vector Group	Dyn11 (common) or Yyn0
Impedance Voltage	6% (or as per client spec)
Temperature Rise	≤ 60°C in winding
Protection Level (IP)	IP54 / IP55 (customizable)

SPECIFICATION	DETAILS
Installation Method	Pad-mounted or skid-mounted
Applicable Standards	IEC 60076, IEC 62271-202, ANSI, BS

## Modular Configuration

### 1. Medium Voltage Compartment

- Incoming cable termination (11/22/33 kV)
- MV switchgear: load break switch or SF6 RMU (3-way / 4-way)
- Surge arresters, CTs and PTs
- Manual or motorized operating mechanism
- Interlocking system for safety

### 2. Transformer Compartment

- 1000 kVA oil-immersed distribution transformer
- Hermetically sealed or conservator type
- High-efficiency CRGO silicon steel core
- Equipped with WTI, OTI, PRV, oil level indicator

### 3. Low Voltage Compartment

- Main incomer ACB / MCCB
- Multiple outgoing feeders with MCCBs or MCBs
- Energy meter, voltmeter, ammeter
- Earth leakage protection (RCD)
- Cable entry with gland plates and terminals

## Enclosure Design

- Compartmentalized steel enclosure with three isolated sections (MV, TX, LV)
- Construction material: powder-coated mild steel / galvanized steel / stainless steel
- Ventilation: Natural air vents or optional exhaust fans
- Anti-corrosion treatment for coastal or dusty environments
- Tamper-proof doors with padlocks and interlocks
- Base channels for forklift movement or crane lifting hooks



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## Advanced Options

- Remote monitoring via SCADA, RTU, or IoT modules
- Anti-condensation heaters
- Solar hybrid-ready outputs
- Automatic load shedding relays
- Arc-proof tested designs (upon request)
- Internal service lighting and maintenance sockets

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## Applications

The 1000 kVA compact substation is suitable for:

- Urban housing estates and smart cities
- Industrial zones and manufacturing parks
- Shopping malls, office towers, and commercial buildings
- Construction and infrastructure projects (e.g., airports, metro systems)
- Renewable energy projects (solar, wind) connected to 11/33kV grid
- Hospitals, universities, data centers, and other high-reliability loads

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## Advantages

**Compact and modular design** — minimal space required

**Quick deployment** — pre-tested and factory-assembled

**Integrated protection** — all three sections secured and isolated

**Reduced civil work** — no separate control building required

**Low maintenance** — sealed transformer design and durable switchgear

**Customizable** — adaptable to various networks and protection schemes

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# Compliance and Certification

The 1000 kVA Compact Substation is manufactured and tested according to:

- **IEC 60076** – Power transformers
- **IEC 62271-202** – High-voltage prefabricated substations
- **IEC 61439** – LV switchgear assemblies
- **ISO 9001 / 14001 / 45001** – Manufacturing and safety standards
- **Local grid codes** – As per country-specific utility requirements

## Typical Dimensions and Weight (Reference Only)

PARAMETER	VALUE
Length	3200 – 4000 mm
Width	2000 – 2400 mm
Height	2200 – 2500 mm
Approx. Weight	4500 – 6000 kg (based on type)

The **1000 kVA Compact Substation** offers a smart, safe, and scalable solution for modern power distribution challenges. Its all-in-one configuration, ease of transport, and compliance with international standards make it the preferred choice for utilities, EPC contractors, and project developers.

Whether installed in urban environments or harsh industrial settings, this kVA Compact Substation guarantees high reliability, fast commissioning, and long-term operational efficiency.

## Related products



500 kVA Compact Substation



11kV Compact Substation



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11/33 kV Substation



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