



1 kVA 3 Phase Transformer Price

Model:	3 Phase
OEM and ODM Services:	Available
Enclosure:	PINEELE standard
Brand:	PINEELE, a Brand Under ZHENGXI
Form:	All- packaged Type
Scope of Application:	Suitable for industrial power distribution, voltage stabilization, and transformer protection. Widely used in commercial buildings, manufacturing plants, and utility substations.
Reviewed By:	Zheng Ji, Senior Electrical Engineer at PINEELE 18+ years of experience in HV switchgear design & testing.
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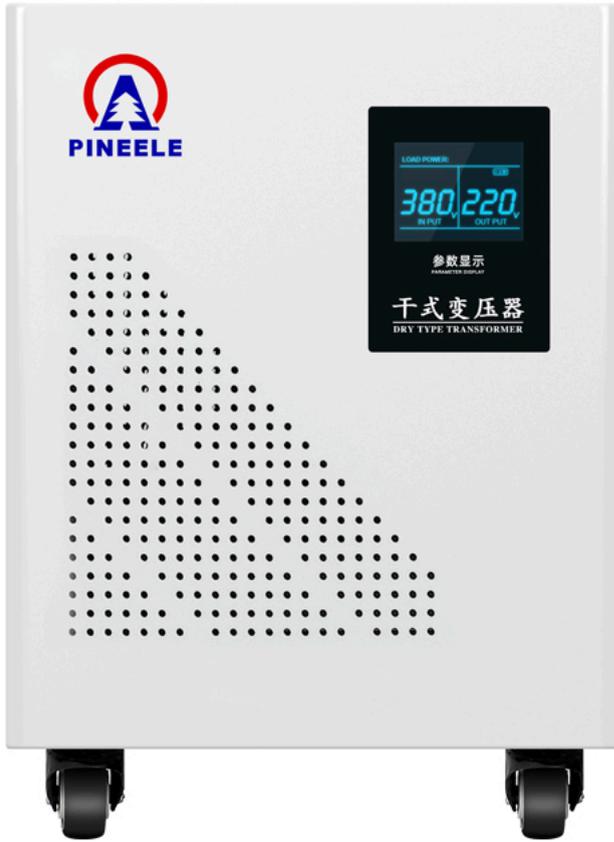
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In the realm of electrical systems, transformers play a vital role in ensuring safe and efficient power distribution. One of the smallest yet significant units is the **1 kVA 3 phase transformer**. Despite its compact guide power capacity, it holds a unique position in specialized applications such as instrumentation, automation, and control panels. This article explores everything from pricing to technical comparisons, market background, and expert selection advice.

What Is a 1 kVA 3 Phase Transformer?

A **1 kVA (kilovolt-ampere) 3 phase transformer** is a low-capacity electrical transformer designed to convert three-phase voltage levels while delivering a total apparent power of 1,000 VA (or 1 kVA). It is typically used to:

- Step down a higher voltage (e.g., 400V) to a usable lower voltage (e.g., 208V, 240V, or 120V);
- Isolate circuits for safety;
- Match impedance in sensitive control equipment.

These transformers are often dry-type or encapsulated, and constructed with laminated silicon steel cores to reduce eddy current losses.





Internal view of a 1 kVA transformer showing copper windings and laminated core

Applications of 1 kVA 3 Phase Transformers

Despite its low capacity, a 1 kVA transformer finds relevance in:

- **Automation Systems:** PLCs and sensor control circuits;
- **Laboratory Equipment:** Powering small three-phase instruments;
- **Marine and Aerospace:** Where space and weight limitations matter;
- **UPS and Power Conditioning:** For signal stability in control loads;
- **Medical Devices:** For circuit isolation and voltage adjustment in low-power devices.

Its compact size, low heat emission, and ease of installation make it ideal for indoor panels, control cabinets, and limited-space installations.





Compact 1 kVA 3 phase transformer installed in control panel

Market Pricing Overview

The price of a **1 kVA 3 phase transformer** varies depending on several factors including:

- Manufacturer (e.g., ABB, Schneider Electric, Siemens, local OEMs);
- Input/output voltage configurations;
- Core material (CRGO steel, amorphous metal);
- Type (dry-type, oil-filled, resin-encapsulated);
- Regulatory compliance (UL, CE, IEC 60076 standards).

Typical Price Range

PRODUCT VARIANT	ESTIMATED PRICE (USD)
Basic Open Frame (240V/120V)	\$80 – \$150
Encapsulated Industrial Type	\$120 – \$200
UL/CE Certified Control Transformer	\$150 – \$250
High-Efficiency Toroidal Type	\$180 – \$300

Note: Prices may vary by country, shipping, taxes, and supplier markup.

Technical Specifications Comparison

To understand where the pricing difference comes from, here's a comparison of key specs:

FEATURE	STANDARD TRANSFORMER	HIGH-EFFICIENCY TOROIDAL
Core Type	Laminated Silicon Steel	Toroidal Core
Cooling	Natural Air Ventilation	Natural or Forced Air
Efficiency	~95%	96–98%
Regulation	Basic	Tight Regulation ($\pm 3\%$)
Noise Level	Moderate	Low

FEATURE	STANDARD TRANSFORMER	HIGH-EFFICIENCY TOROIDAL
Weight	Heavier	Lightweight
Footprint	Larger	Compact

Market Trends and Industry Background

As per industry research from IEEE and various global transformer associations:

- The **low-voltage transformer segment** is growing steadily due to the rise in automation and smart control systems.
- Miniaturization trends** have led to increased demand for high-efficiency, compact transformers in aerospace and robotics.
- Energy efficiency regulations** (especially in Europe and North America) now influence buying decisions, even for small capacity units like 1 kVA.
- OEMs are integrating **control transformers** directly into switchboards and compact panels, making these transformers increasingly relevant.

Sources like Wikipedia's Transformer entry confirm the critical role of low-capacity transformers in embedded applications.

Differences from Other Transformer Types

FEATURE	1 KVA 3 PHASE TRANSFORMER	SINGLE-PHASE TRANSFORMER	HIGHER KVA TRANSFORMERS
Phase Balance Required	Yes	No	Yes
Cost per kVA	Higher	Lower	Lower (economies of scale)
Application Type	Specialized/Industrial	Residential/Small loads	Large systems
Size	Compact	Smaller	Bulky
Wiring Complexity	Moderate	Simple	Complex

In summary, **1 kVA 3 phase transformers are more expensive per kVA**, but they provide precision and stability where it's needed.

Buying Advice and Selection Tips

Here are expert tips to help you choose the best 1 kVA 3 phase transformer:

- Match Input/Output Voltage Requirements**
Common configs: 480V to 240V, 400V to 208V, etc.
- Choose the Right Core Type**
Toroidal = higher efficiency and lower noise, but higher cost.
- Check Certifications**
For industrial or export use, UL, CE, or IEC compliance is essential.
- Consider Environmental Conditions**
For dusty or moist areas, use epoxy-coated or encapsulated types (IP44+).
- Compare Total Cost of Ownership**
An efficient transformer saves energy and reduces panel heat—ideal for long-term use.
- Buy from Trusted Brands**
ABB, Schneider Electric, Eaton, and Siemens are known for reliability and global support.

FAQ: 1 kVA 3 Phase Transformer

Q1: Can I use a 1 kVA 3 phase transformer in a single-phase system?

A: No. Three-phase transformers require a 3-phase input. For single-phase systems, you need a dedicated single-phase transformer.

Q2: Is 1 kVA enough for industrial use?

A: It depends on the load. 1 kVA = 1,000 VA, so it can power small PLC systems, relays, and some low-wattage motors—but not heavy machinery.

Q3: What's the typical lifespan of a 1 kVA transformer?

A: With proper ventilation and non-overloaded operation, a dry-type transformer can last 20+ years.

Conclusion

The **1 kVA 3 phase transformer** may be small in size, but it plays a pivotal role in critical control, automation, and precision equipment. Pricing typically ranges from **\$80 to \$300**, depending on build quality, efficiency, and certifications. By understanding technical specifications and market dynamics, buyers can choose the right transformer that ensures both safety and performance.

When shopping for one, always compare **input/output specs, core design, certifications, and vendor support**. With careful selection, a quality transformer becomes a reliable backbone for any low-power three-phase system.

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