

CNBYG: Advanced Power Quality Systems & Intelligent Power Capacitors for Industrial Grids

CNBYG delivers certified power quality systems and high-reliability intelligent power capacitors for reactive power compensation and harmonic control worldwide.

YUEQING, ZHEJIANG, CHINA, July 29, 2026 /EINPresswire.com/ -- Poor power quality — including low power factor, harmonic distortion and voltage instability — costs industrial facilities billions annually in wasted energy, premature equipment failure and unplanned downtime. As a specialized high-tech enterprise focused on intelligent power quality innovation and manufacturing, [CNBYG](#) (under Baoyu Holding Co., Ltd.) provides end-to-end solutions that help global clients improve grid efficiency, reduce operational costs and extend asset lifespan.

1.About CNBYG: Expertise in Power Quality R&D and Lean Manufacturing

Founded in 2015, CNBYG has grown into a recognized global leader in power quality technology, serving clients across Europe, North America, Southeast Asia and the Middle East. The company operates dedicated R&D centers and a digital smart factory, combining lean manufacturing principles with deep engineering expertise to deliver consistent, high-performance products at competitive factory-direct pricing.

CNBYG's core product portfolio covers the full spectrum of power quality management:



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power-quality-system

Active harmonic filtering solutions:
Active Power Filter (APF) and Active
Harmonic Filter (AHF)

Reactive power compensation
solutions: Static Var Generator (SVG)
and Advanced Static Var Generator
(ASVG)

Passive compensation components:
intelligent capacitors, series reactors,
power factor controllers and switching
devices

Power monitoring instruments and
system-level integration solutions

All products undergo 100% automated
digital testing before delivery, and
Factory Acceptance Tests (FAT) are
available for international buyers to
verify performance on-site. The
company holds over 80 technology
patents and adheres to strict
international quality standards,
ensuring reliable operation even in
harsh industrial environments such as
petrochemical plants, mining sites and
renewable energy installations.

2. Integrated [Power Quality System](#) for Full-Spectrum Grid Improvement

For industrial and commercial facilities,
addressing power quality issues
requires a coordinated system
approach, not isolated components.
CNBYG's complete Power Quality
System framework combines active
and passive technologies to solve both harmonic distortion and reactive power challenges in a
single, optimized solution.

At the core of the system are two active compensation technologies:

APF/AHF Active Harmonic Filters: These devices dynamically detect and cancel harmonic currents
generated by nonlinear loads such as VFDs, welding machines, UPS systems and switching
power supplies. They effectively reduce total harmonic distortion (THD), eliminate neutral line



by81-series-intelligent-capacitors



Active Power Filter

overheating and prevent sensitive equipment from malfunctioning.

SVG/ASVG Static Var Generators: These provide bidirectional, millisecond-fast reactive power compensation, maintaining a stable power factor close to 0.99 and eliminating voltage fluctuations and reactive power backflow issues common in renewable energy and charging station applications.

Complementing these active devices is a full range of passive components including intelligent capacitors, series reactors and automatic controllers, which form cost-effective layered compensation schemes. The system can be customized to match specific load profiles, with options for wall-mounted, rack-mounted and cabinet-style configurations to fit different electrical room layouts.

This integrated approach delivers measurable business outcomes: improved power factor eliminates utility penalty fees, reduced harmonics extend equipment service life, and stable voltage levels reduce unplanned downtime. CNBYG's solutions have been successfully deployed across industries including automobile manufacturing, data centers, photovoltaic and EV charging stations, oil and gas, and injection molding.

Real-world project results demonstrate the impact:

At a large automobile manufacturing plant, deployment of SVG+APF systems raised power factor from 0.72 to 0.99, cutting monthly electricity costs significantly and eliminating welding machine malfunctions.

In a data center project, APF units reduced neutral line current by 60% and lowered transformer operating temperature by 15°C, significantly improving system reliability and cooling efficiency. For photovoltaic and EV charging stations, SVG systems solved reactive power backflow and voltage fluctuation issues caused by intermittent generation and variable charging loads.

3.BY81 Series [Intelligent Power Capacitor](#): Smart, Reliable Reactive Compensation

For facilities seeking a cost-effective, easy-to-deploy reactive power compensation solution, the Intelligent Power Capacitor (BY81 Series) from CNBYG represents a major advancement over traditional capacitor banks, integrating measurement, control, switching and protection into a single compact module.

Built around self-healing low-voltage power capacitors with an industrial-grade MCU control unit, the BY81 series delivers several key advantages over conventional compensation equipment:

Zero-inrush, zero-crossing switching: Synchronous switching technology ensures precise switching at voltage zero-crossing points, eliminating inrush current, overvoltage, arcing and contact bounce. This extends the service life of the unit to up to 1 million switching operations.

Modular, scalable design: Multiple units can be combined flexibly to match system capacity

requirements. Modules automatically elect a master unit and implement fault auto-switching, ensuring uninterrupted compensation even if individual units go offline.

Comprehensive built-in protection: The unit integrates full protection features including over-temperature, over-harmonic, phase-loss and three-phase imbalance protection, reducing the need for external protective components and improving system reliability.

Advanced metering and diagnostics: Built-in power analysis capabilities provide real-time visibility into voltage, current, power factor and temperature, with an intuitive display for easy operation and troubleshooting.

Low power consumption: Standby power consumption is less than 1W, minimizing self-loss and contributing to overall energy savings.

The BY81 series supports both delta (Δ) and star (Y) connection configurations, with a rated voltage range of 220V to 380V and an operating temperature range from -40°C to +40°C, making it suitable for deployment in harsh industrial environments. It communicates via RS-485 and can integrate seamlessly with CNBYG's power quality controllers and larger SVG/APF systems for coordinated system-level control. The product complies with DL/T842-2003 and GB/T22582-2008 power industry standards, with consistent performance verified by full automated testing.

Compared to traditional fixed capacitor banks, intelligent power capacitors reduce installation time by 50%, require less cabinet space, and deliver more accurate, responsive compensation. They are ideal for commercial buildings, manufacturing plants, municipal infrastructure and small industrial facilities looking to upgrade their power factor correction systems.

4.Frequently Asked Questions

Q: What products are included in CNBYG's power quality system?

A: CNBYG's power quality system covers a complete product portfolio: active solutions including APF active power filters and SVG static var generators, passive compensation components including intelligent capacitors, series reactors and power factor controllers, plus power monitoring instruments and system integration services. This allows fully customized solutions for harmonic control, reactive power compensation and grid stability improvement.

Q: What are the key benefits of CNBYG's intelligent power capacitor?

A: The BY81 series intelligent power capacitor offers zero-inrush zero-crossing switching with a 1 million-cycle service life, modular scalable design with automatic fault switching, comprehensive built-in protection, integrated power metering and low standby power consumption. It is easier to install, more reliable and delivers more precise compensation than traditional capacitor banks.

Q: Which industries can benefit from CNBYG power quality solutions?

A: CNBYG solutions are deployed across a wide range of industries including automobile manufacturing, data centers, oil and gas, mining, injection molding, photovoltaic power plants and EV charging stations. Any facility with large numbers of nonlinear loads or poor power factor can reduce energy costs and improve equipment reliability with proper power quality improvement.

Q: Does CNBYG provide international on-site support and after-sales service?

A: Yes. CNBYG provides end-to-end services including pre-sales site assessment and system design, factory acceptance testing, on-site commissioning and operator training, and long-term after-sales support with rapid spare parts supply and remote diagnostic services. Technical teams are available to support projects worldwide.

Q: What causes frequent start-stop of power quality compensation equipment?

A: Frequent start-stop is typically caused by three issues: first, a blocked or stuck cooling fan triggering over-temperature protection; second, grid voltage fluctuations exceeding $\pm 20\%$ outside the normal operating range; third, harmonic distortion rates exceeding 30% triggering current-limiting protection thresholds. Operators should check these three areas first when troubleshooting.

5.Final Thoughts

As industrial loads grow more complex and renewable energy integration accelerates, maintaining high power quality is no longer optional — it is a critical factor in operational efficiency, cost control and equipment reliability. With strong R&D capabilities, digital lean manufacturing, a comprehensive product portfolio and proven real-world project experience, CNBYG is a trusted partner for facilities worldwide seeking to improve their power quality.

Whether you need a complete power quality system design for a large industrial plant, are upgrading your facility's power factor correction with intelligent power capacitors, or require custom harmonic mitigation for a specific application, CNBYG's technical team provides professional support from initial assessment through long-term after-sales service. To explore the full product range, download technical datasheets or request a customized power quality solution, visit the official website or contact the international sales team today.

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