

# Power Control Products for Transmission and Distribution



## Custom Switchgear Retrofits: Increase Safety and Functionality, Extend Switchgear Life

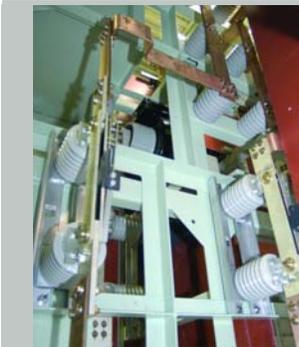


With extensive engineering expertise, Phoenix Electric can refurbish, retrofit, and upgrade aging switchgear to extend its useful life. Retrofits can:

- Incorporate advanced components and technology
- Add functionality
- Enhance equipment safety
- Minimize service disruption
- Maximize return on investment

Each retrofit is custom-tailored to a particular application and specific customer requirements. Phoenix Electric coordinates and oversees every aspect of the project from engineering to manufacturing to final assembly and testing to on-site commissioning.

## Specialty Switchgear: Design, Manufacture, and Commissioning of Specialized Switchgear



Phoenix can also focus its engineering expertise on designing custom specialty switchgear. Switchgear can be designed to match older or existing equipment (as in capacity expansion) or to take full advantage of the latest advances in technology. This process includes: a complete assessment of the electrical and

mechanical requirements for the switchgear; a site visit; recommendations (including conceptual design and definition of scope); finalization of design and specifications; scheduling, project management, assembly, testing, and commissioning.

## Custom Engineered Controls: Choice of Leading Gas Insulated Switchgear Manufacturers Worldwide



Phoenix Electric custom-engineers ANSI/NEMA control, protection, and interlocking systems for leading medium- and high-voltage gas insulated switchgear manufacturers worldwide. Phoenix is involved in every step of the design and manufacturing process from specification support, to detailed design and meticulous assembly, to operational testing. All

control philosophies and interlocking protocols conform to US Utility Standards and Procedures for safe, reliable operation. Controls are manufactured using only readily available heavy-duty UL-listed components. Provided with the controls, complete ANSI drawings facilitate installation, commissioning, testing, maintenance, and troubleshooting.

## Air Core Reactors: Protect Plant and Equipment From Damaging Power Transients

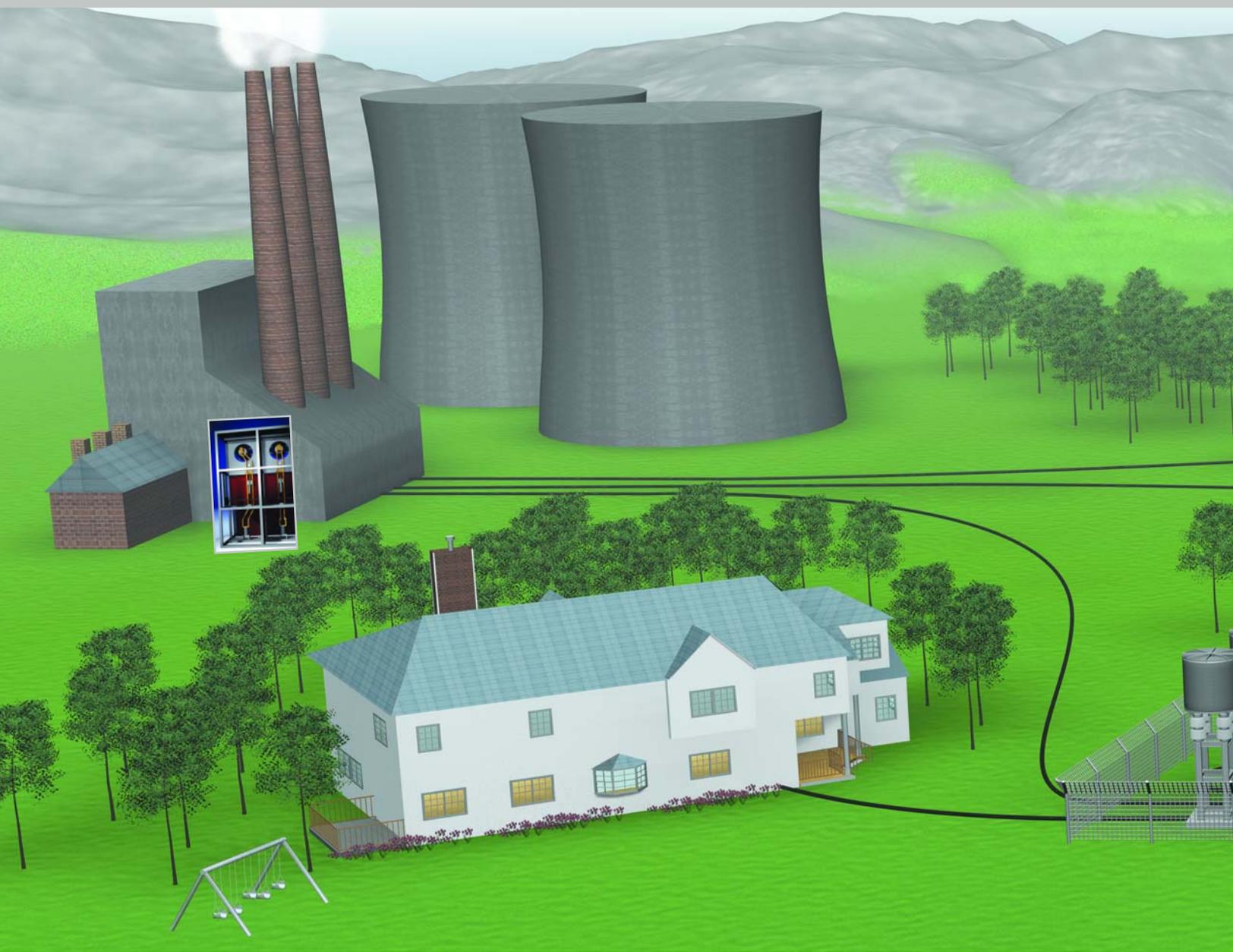


Phoenix Electric air core reactors protect your plant and equipment from damaging power surges. Reactors are designed to North American or International standards and are suitable for indoor or outdoor use on systems rated to 800 kV. Each single or multi-layer cylindrically wound reactor is custom designed for a specific application.

Reactors can be used to:

- Reduce short circuit current levels
- Filter out dangerous harmonics, limit resonant system frequencies
- Provide neutral grounding, limit line-to-ground fault currents
- Limit in-rush currents/overvoltages
- Reduce induced/secondary transients
- Balance currents in parallel circuits
- Compensate for capacitive voltages

*From generating plant to user...*



**Custom Designed and Manufactured Products  
for Transmission and Distribution**

*Phoenix Electric Corporation has been designing and manufacturing products for the transmission and distribution industry for over 30 years. More than half of the company's employees are experienced engineers with the skills and expertise to custom design products and systems to meet your specific application needs—fully and without compromise.*

# Phoenix Electric helps y



## Custom Switchgear Retrofits

- Extend switchgear life
- Incorporate advanced technology
- Add functionality
- Minimize service disruption
- Maximize return on investment



## Specialty Switchgear

- To match older/existing equipment
- To meet highly specialized or unusual requirements
- Complete project management: design, manufacturing, testing, installation, and commissioning

# You control power flow!



## Custom Engineered Controls

- Control, protection, and interlocking systems for leading worldwide medium- and high-voltage gas-insulated switchgear manufacturers
- Control philosophies and interlocking protocols conform to US Utility Standards and Procedures
- Complete ANSI drawings provided



## Air Core Reactors

- Models for limiting current or transients, filtering or tuning harmonics, neutral grounding, balancing parallel circuits, or compensating for capacitive voltages
- For systems to 800 kV
- Indoor or outdoor use

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## Specialty Power Control Products Customized to Your Specific Needs

In the past few years, many manufacturers and suppliers have backed away from providing custom products and solutions, recognizing the heavy investment in engineering resources required to be successful at it. Phoenix Electric, on the other hand, thrives on the challenges of custom design and manufacturing. With experienced, highly knowledgeable engineers and technicians comprising more than half its employees, Phoenix Electric specializes in developing custom products, systems, and solutions for the power transmission and distribution industry. All system design and manufacturing are performed in accordance with ANSI, IEEE, NEMA, and NEC Standards. A comprehensive Quality Assurance program consistent with ISO 9001 standards ensures exceptional workmanship and quality. So, the next time a standard product doesn't fully meet your needs, please contact Phoenix Electric about a no-compromise, custom solution.

