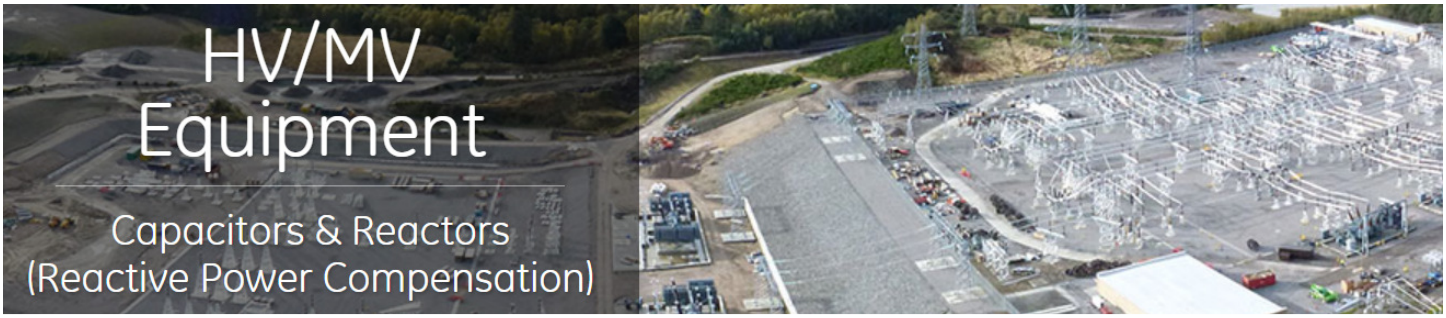


Capacitors & Reactors (Reactive Power Compensation)

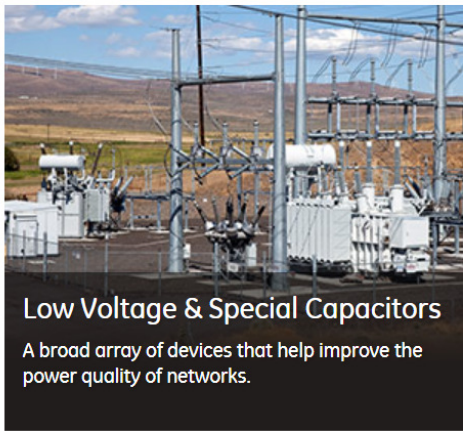
For a century, utilities have relied on GE to deliver electrical products and services to meet their quality, durability and performance needs. Our capacitor and reactor product lines are an integral part of our portfolio. GE provides power capacitors that meet ANSI, IEEE and IEC standards, and our low voltage capacitors are UL listed. Ratings range from 1 kvar to 500 MVAR, and from 240 volts to 500 KV.

High Voltage Capacitors

Increased durability and harmonic tolerance with ratings of 25 to 1,000 kVAR and 2.4 kV to 25 kV.

Reactors

Air- and iron-core reactors designed to be durable, maintenance free and environmentally friendly.



Low Voltage & Special Capacitors

A broad array of devices that help improve the power quality of networks.

High Voltage Capacitors

Increase Capacity, Stability & Power Quality

GE's high voltage capacitors provide simple and reliable reactive power to improve system performance, quality and efficiency. They are designed and manufactured using advanced technology and high-quality materials, and are all-film dielectric units impregnated with biodegradable dielectric liquid.

GE's high voltage capacitor portfolio includes internally fused, externally fused and fuseless capacitors available in ratings of 25 to 1,100 kVAR for single-phase units, and 300 to 400 kVAR for three-phase units at 2.4 kV to 25 kV. The units can be designed to meet IEC 60871, IEEE 18 and CSA C22.2 standards.

High voltage capacitor banks

GE provides solutions for high voltage PFC (Power Factor Control) and filtering. GE's high voltage capacitor bank equipment is offered in three primary types of fusing schemes: **internally fused, externally fused** and **fuseless**. GE can analyze your network thoroughly and help you to choose the design that best fits your specific requirements.

Typical passive solutions

Shunt bank capacitor bank provided optionally with accessories including surge current limiting reactors and switches.

Detuned filter is a power factor solution for networks with harmonics. Series connected capacitor bank and reactor increase the impedance of the circuit at network harmonics reducing capacitor overload.

Tuned harmonic filter provides power factor solutions at fundamental frequency and filters harmonics at a specific frequency. Series connected capacitor bank and reactor create a low impedance path for specific network harmonic(s).

For more information on our shunt bank, detuned filter & tuned harmonic filter solutions, view the brochure and application guide.

Mechanically Switched Capacitor with Damped Network (MSCDN) mitigates undesired network resonances by adding a damping circuit in series with a capacitor bank. For more information view the brochure.

Open rack equipment

Open stack rack capacitor banks are applicable where a large amount of reactive power is required at high voltage. Capacitors and auxiliary equipment are installed in welded aluminum or galvanized steel racks and shipped ready for field installation.

Features:

- Rated power up to 600MVAr / rated voltage up to 800kV
- Rugged for corrosive environment and wild life protection
- Multiple fusing schemes (internal, external and fuseless)
- Multiple switching and protection options available
- Fast installation and quick return-on-investment

For more information view the brochure and application guide.

Pole mounted equipment

GE's pole mounted capacitor products are pre-wired, factory assembled and shipped ready for installation with single-phase capacitor units. Racks are made of welded structural aluminum suitable for mounting switches, junction box, cable assembly, lightning arresters and/or potential transformers.

Features:

- Power range 150-3600 kVAR / voltage range 2.4-34.5 kV
- Oil or vacuum switching available
- 3, 6, 9, or 12 unit racks available
- Individual or group fusing available
- High current vacuum switch mounting capability
- Rugged for corrosive environment and wild life protection

For more information view the brochure and application guide.

Metal enclosed capacitor banks

GE's metal enclosed capacitor banks provide modular small footprint solution for power factor controlling and harmonic filtering at medium voltages. Capacitors, reactors and auxiliary equipment are installed in a welded galvaneal enclosure and shipped ready for installation. Banks are designed to meet extreme conditions from marine conditions to desert and from artic to tropic.

Features:

- Voltages from 2.4kV through 38kV
- Power ratings up to 40MVAr in a single enclosure
- Oil or vacuum switching
- Up to 15 steps in a single bank
- Enclosure protection level up to IP56/NEMA 4X
- Protection, grounding, disconnect, & interlock options
- Compliant with ANSI, IEEE, IEC, NEC and NESC

For more information view the brochure.

Fixed medium voltage PFC

GE's High Voltage WeatherTight (HWT) capacitor banks are suitable for use on primary circuits where small amounts of kVAR are required. They may be installed at various load centers or directly at the terminals of 2300 and 4000 volt motors. Equipment is suitable for indoor and outdoor applications.

Features:

- Low losses <0.2W/kVAr
- Voltage ratings up to 13.8kV, power ratings up to 900kVAr
- Blown fuse indication lights
- Rugged design for harsh environment
- Operating temperature -40°C to +46°C (-40°F to 115°F)
- Compliant with IEEE, IEC, CSA and NEMA

For more information view the brochure.

HVDC / FACTS applications

GE's HV reactive power compensation solutions have extensive experience in FACTS and HVDC, with a large installation base on both. Needs for compensation and filtering equipment in these solutions vary depending on overall design of the equipment, and is typically a combination of different kinds of capacitor banks and filters including:

- Detuned filter capacitor bank
- Single, double or triple tuned filter bank
- High-pass filter
- C-type filter
- HV DC capacitor banks

Visit GE's FACTS and HVDC webpages for more information on these solutions for challenges that the modern power grid faces today.

Reactors

Long life with maintenance-free operation and environmentally friendly design

For more than 50 years, GE has supplied a broad range of reactors to markets around the world. With proven industry expertise, stringent quality controls, first class materials and full international compliance, GE's reactors are designed to meet a wide variety of customer needs.

GE's environmental-friendly, long-life, maintenance-free reactors enhance system performance and power quality from transmission and distribution to industrials, improving network operational efficiency. This results in considerable savings for customers and reduces the environmental impact of their operations.

GE's team of experts analyze our customer's power compensation needs from low voltage current limiting to high voltage shunt/series applications and engineer the right solutions to provide optimal efficiency and economy.

Air-core Reactors

GE's air-core reactors (ACR) provide a linear response of impedance versus current which is essential for numerous applications. GE's reactors consist of aluminum or copper conductors, which are insulated with first class insulation materials. In encapsulated design, the conductors are mechanically immobilized and encapsulated by epoxy impregnated fiberglass, which assure high hygroscopic characteristic and long service life.

Why GE's air-core reactors?

- Complete range of products and solutions in power compensation
- Long term expertise and know-how in power compensation projects
- Full line supplier with synergies between business and product lines
- Proven quality and performance of the products
- Worldwide presence with customer intimacy and proximity
- State-of-the-art in manufacturing process and machinery

Iron-core Reactors

HV iron-core reactors are connected in series with the capacitor units to form a series resonant circuit with very low impedance. GE's line of iron-core reactors are ideal for a variety of applications including capacitor banks formed by several steps, several capacitor banks connected in the same busbar, and capacitor bank installations with risk of resonance or with presence of harmonics.

Key benefits

- Reactive power compensation (power factor correction) in networks with harmonics
- Reduction of inrush currents that flow from step to step of the capacitor banks when switched
- Avoiding the risk of resonance as the LC circuit is having a resonance frequency below the first existing harmonic
- Decrease the level of harmonic distortion, as the circuit is also having a certain tuning frequency at which the branch will offer low impedance path for harmonic currents

Applications for renewable generation, wind and solar farms:

- Shunt reactors (up to 500kV)
- Short-circuit current-limiting reactors (up to 800kV)
- Tuning reactors for harmonic filters and MSCDN
- Damping reactors for shunt capacitor banks

Applications for FACTS, HVDC LCC and VSC, and transmission and distribution substations:

- Thyristor-controlled and thyristor-switched reactors for SVC
- Phase-reactors for STATCOM
- Tuning/blocking reactors for AC/DC, harmonic filters and MSCDN
- Damping reactors for TSC and shunt banks
- Smoothing and valve reactors for HVDC
- Shunt reactors (up to 500kV)
- Short-circuit current-limiting reactors (up to 800kV)
- Power-flow control reactors
- Neutral grounding reactors

Applications for buildings and cities, oil and gas, and industry and infrastructure:

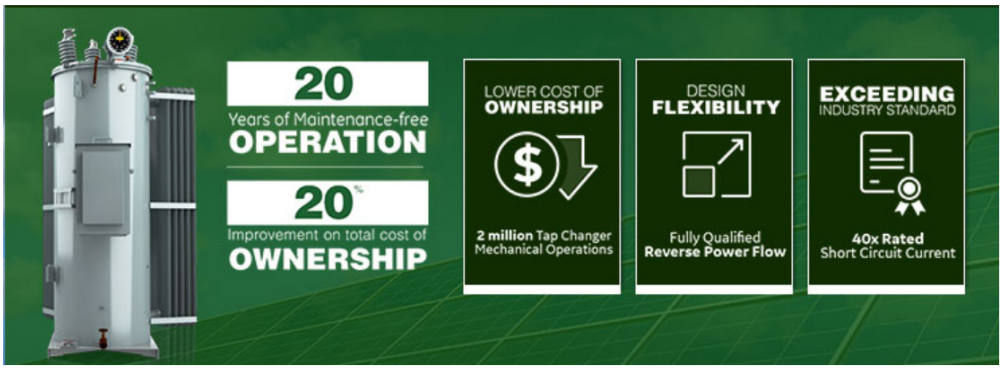
- Shunt reactors (up to 500kV)
- Short-circuit current-limiting reactors (up to 800kV)
- Tuning reactors for harmonic filters and MSCDN
- Damping reactors for shunt capacitor banks
- Arc-furnace reactors
- Motor-starting reactors
- Laboratory reactors (special applications)

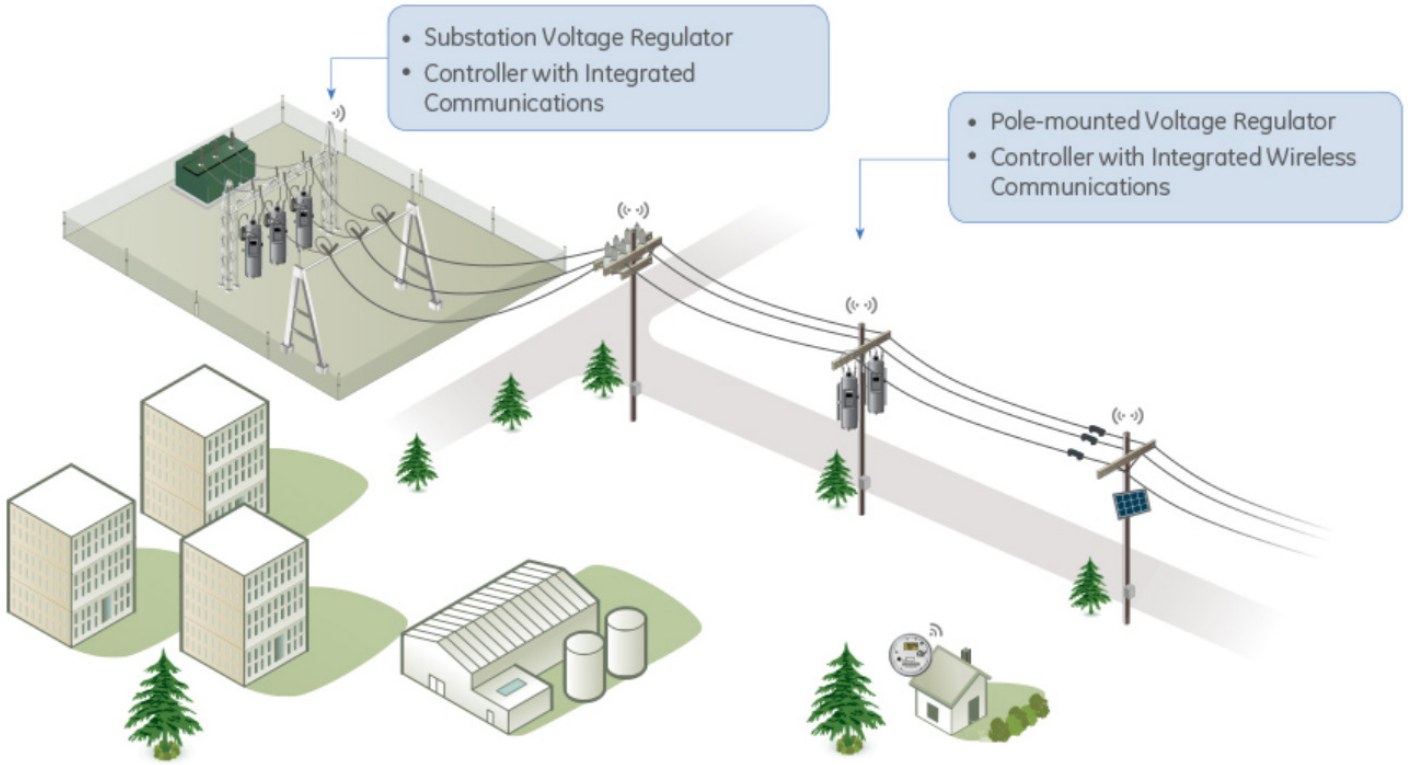
Voltage Regulators

Robust Maintenance Free Solutions

The voltage on modern distribution circuits is becoming increasing difficult to manage. New distributed energy resources, such as solar, combined with the growth of sophisticated loads creates voltage challenges on distribution network systems. Existing voltage control devices cannot maintain a consistent voltage profile, especially when trying to manage the intermittency of these resources and loads. These new loads and intermittent resources tend to drive the voltage regulation beyond its designed capability, and reduce the typical voltage regulator life expectancy and increase the ongoing maintenance cost for reliable operation.

GE's family of voltage regulators are cost effective, robust solutions to regulate voltage without comprising quality and reliability, providing a total cost of ownership that is nearly 20% better than competing products. GE's voltage regulators comply with IEEE® C57.15-2009 and NEMA® 4, and are independently certified by KEMA®. They can operate up to 2 million mechanical operations, providing years of reliable service without costly maintenance. Additionally, GE is one of the first to incorporate measured Reverse Power Flow capability, which is critical on today's distribution circuits where distributed generation is present.





GE's Voltage Regulation Applications