

Insulation and Protection Enhancing the Reliability of Overhead Power Systems



TE Energy

TE Energy provides solutions for substations, underground cable, overhead lines, and railway applications. These products have earned a world wide reputation for materials, innovation, quality, service and technical expertise.

TE Connectivity Energy produces insulating products for underground, overhead systems for electrical supply utilities, railways, OEM and major industrial companies.

Safety and reliability are vital in high-voltage products and TE Energy is committed to pioneering improvements in performance for our customers at all levels. Our development teams work to generate a superior range of high-performance products.

TE Energy ensures ISO 9000 series and 14001 certification underlining our commitment to quality and the environment. Our customers can have full confidence in the products, services and information supplied.

Insulation and protection

Our strong, international brand portfolio provides a range of products with proven performance (Raychem, Bowthorpe EMP, Axicom).

- Proven service experience in many of the world's toughest environments
- World-class manufacturing, materials and components suppliers
- Over 5.5 million polymeric and 15 million porcelain products installed worldwide to date

All products developed using our extensive service experience and within the constraints of international standards including IEC, IEEE, ANSI and many national standards.

High-voltage material requirements

More than 40 years of systematic research into new materials to provide solutions for the electrical power industry has resulted in a wide range of products and materials with a unique combination of properties:

- Non-tracking and low erosion rates in polluted and non-polluted environments
- Long-term weatherability, resistance to thermal ageing
- UV resistance
- Chemical resistance
- Tough, tear and impact resistance
- Proven field experience, in all environments over 35 years

We manufacture products using both silicone and EVA.



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Asset protection

Insulation enhancement systems for substations and overhead lines. Designed to prevent unplanned outages due to accidental bridging and to help upgrade insulation levels at critical points in systems.



Low-voltage surge arresters

LV arresters are used to provide protection for LV overhead lines, consumer in-house supplies, distribution transformers and other appliances.



Medium-voltage surge arresters

Metal oxide varistor distribution arresters for indoor and outdoor applications for protection of overhead lines, DC locomotives and switchgear applications.



High-voltage surge arresters

Porcelain and polymeric series parallel and single column constructed arresters for protection of transmission systems up to 800 kV.



Polymeric insulators

Insulators and insulating components/housings providing reliable solutions for power utilities and railway customers with installations in high pollution environments and applications up to 500 kV.

Supplying foam filled composite insulators, made of glassfibre-reinforced resin tube with silicone rubber housing to OEMs for use in high voltage apparatuses up to 800 kV.



Porcelain insulators

Insulators for applications up to system voltages of 500 kV. This range of insulators offers a cost-effective solution for low and medium polluted environments.

Surge arresters

Low and medium voltage

We offer surge arresters for medium voltage power distribution systems that are designed to reliably protect your valuable assets from overvoltage. They withstand severe outdoor exposure over long operating lifetimes and help maintain service reliability in both overhead and underground installations: Our arresters have passed the most rigorous tests (IEC 60099-4, ANSI C62.11, IEC 61643).

Low residual voltage – high energy absorption capacity

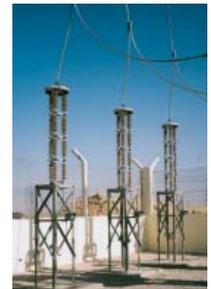
The metal oxide varistors used in the arresters provide high energy absorption and low residual voltages. Multiple high current lightning and long duration switching surges are absorbed without noticeable changes in the arrester characteristics or stability.

- Outdoor applications
- Indoor applications (gas-insulated switchgears, busbars)
- Motor and generator protection
- Special applications (HV cable sheath and current limiting arcing horns for covered conductor systems)
- Low voltage distribution systems
- AC/DC railway applications

High voltage

We provide a wide range of porcelain and polymeric transmission/substation surge arresters for applications up to 800 kV. The Bowthorpe EMP range of arresters has demonstrated reliable performance in environments all over the world for over 60 years.

- Transmission line arrester
- Modular series parallel polymeric surge arrester
- Modular single column polymeric surge arrester
- Polymeric housed surge arrester
- Porcelain housed surge arrester
- Cable sheath arrester



Insulators

Polymeric

Our competence in materials science is fundamental to our ability to design polymeric insulators that more than meet application requirements even for severe environments. We have worked closely with customers to optimize the design and installation of our products in some of the most challenging environments in the world. Polymeric insulators are based on our 35 years experience in the field of crosslinked polymers for medium- and high-voltage applications. They consist of a polymeric housing over a pultruded fibreglass rod to which galvanized steel or aluminum end fittings are attached. Housing materials in either ethylene vinyl acetate (EVA) or silicone are available depending on customer preference and application.

- Line post insulators
- Station post insulators
- Tension insulators
- Hybrid post insulators
- Railway insulators
- Mold in Place (MIP) components
- Heatshrinkable shedded components

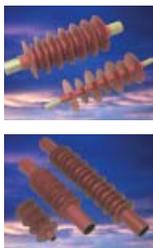
Porcelain & Glass

Porcelain insulators are the traditional choice for distribution line, busbar and apparatus insulation. Manufactured from high-quality non-porous electrical porcelain, they provide a long-life and cost-effective solution for the majority of applications. With our porcelain insulators we have 80 years service experience in electric power supply and rail applications.

- Line post insulators
- Station post insulators
- Tension and strut insulators
- Railway insulators
- Disc insulators
- Glass disc insulators

We provide a complete range of products by sourcing the following items from reputable partners:

- Spool, strain and pin insulators



Insulators

High voltage insulators

AXICOM composite hollow insulators are made of a glass-fibre reinforced resin tube with silicone rubber housing. The superior material properties are especially adapted for high voltage applications in outdoor service.

Composite insulator technology was first introduced more than 30 years ago. Hollow types have been in service for approximately 20 years. The proven advantages of composites over porcelain are well-known and accepted. The relative importance of the technical and logistic advantages will differ depending on the specific application and service conditions.

Hollow core composite insulators for

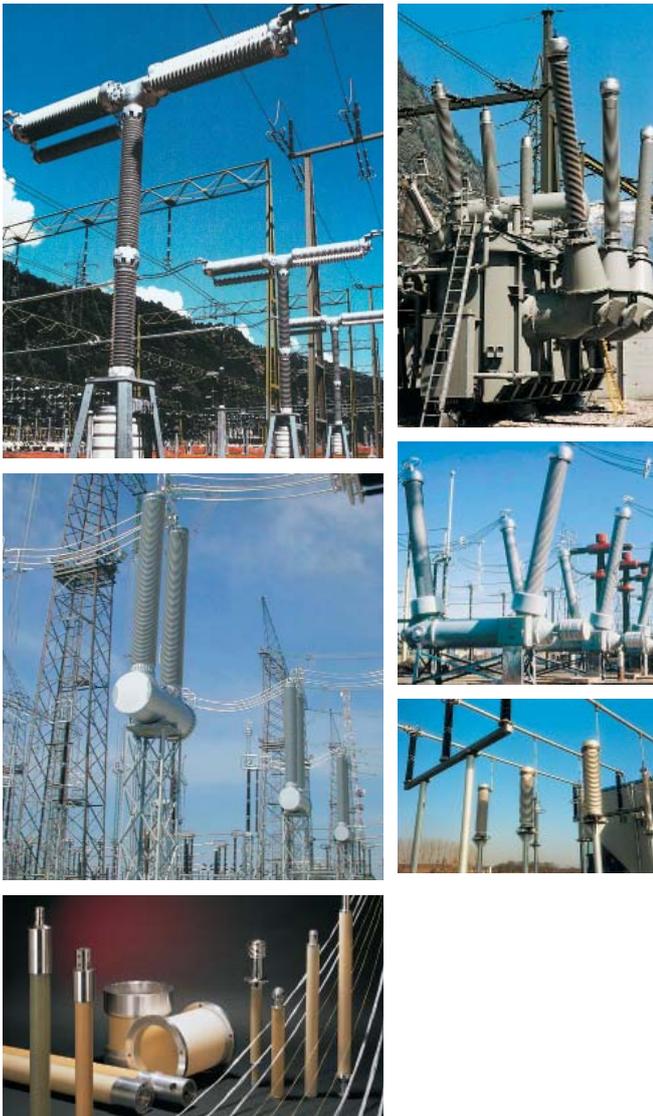
- Gas-insulated switchgear
- Live and dead tank breakers
- Cable terminations
- Bushings
- Instrument transformers

Foam filled composite insulators

- Station post insulators

Vacuum resin impregnated fibre reinforced components for

- Gas-insulated switchgear
- Operating rods
- Arcing chambers
- Support insulators



About TE Connectivity

TE Connectivity is a global, \$14 billion company that designs and manufactures approximately 500,000 products that connect and protect the flow of power and data inside the products that touch every aspect of our lives. Our nearly 100,000 employees partner with customers in virtually every industry – from consumer electronics, energy and healthcare, to automotive, aerospace and communication networks – enabling smarter, faster, better technologies to connect products to possibilities.

More information on TE Connectivity can be found at: www.te.com

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TE Energy – innovative and economical solutions for the electrical power industry: cable accessories, connectors & fittings, insulators & insulation, surge arresters, switching equipment, street lighting, power measurement and control.

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