Polymeric Surge Arresters

Reliable protection for power equipment upto 800kV
Safety and reliability are vital in the energy industry, and Raychem RPG’s Energy Products Division is committed to pioneering improvements in performance at all levels. RRL’s development teams work to generate a superior range of high-performance products. All products are developed using Raychem’s extensive service experience, as per the international standards including IEC, IEEE, ANSI, and many national standards.

Raychem’s polymeric surge arresters for voltage power distribution systems up to 800kV are designed to reliably protect your valuable assets from over-voltages. They withstand severe outdoor exposure over long operating lifetimes and help maintain service reliability in both overhead and underground installations. Raychem’s polymeric surge arresters have passed the most rigorous tests (IEC 60099-4, ANSI C62.11, IEC 61643).

Advantages
All our arresters are manufactured using ZnO varistors, which display excellent thermal and current handling characteristics due to the guaranteed homogeneity of the varistor volume. This thermal behavior yields products with:

- Excellent temporary overvoltage (TOV) performance
- Safe, non-shattering failure in the short circuit test by pre-failing to higher fault currents
- High energy handling capability

Structure of Polymeric Surge Arrester
Raychem’s ZnO varistor disk has excellent electrical characteristics and thermal stability. The resulting new varistor has resulted in excellent energy handling and TOV performance.

Low Voltage Surge Arresters
Provide protection for LV overhead lines, consumer in-house supplies, distribution transformers, and other appliances

Medium Voltage Surge Arresters
For indoor and outdoor applications, for protection of overhead lines, DC locomotives, switchgear applications, and motor protection

High Voltage Surge Arresters
For protection of transmission systems up to 800 kV
Raychem’s low voltage surge arresters provide protection for low-voltage overhead lines, consumer in-house supplies, distribution transformers and other systems. The gapless metal-oxide varistor incorporated in the surge arrester reliably imposes low-value limits on surges caused by atmospheric overvoltages and switching transients, thus protecting the insulation of the consumer-side networks and equipment.

The LV surge arresters are in compliance with Class II requirements as defined by IEC 61643-1. They are designed for applications in which protection against direct contact is not necessary.

**Product Features**
- Suitable for indoor and outdoor use
- Integrated disconnector
- Housing and lead is flame retardant and UV resistant
- Easy to identify failure indicator
- Easy to install (no tools required)
- Large selection of standard accessories
- CE certified

**Applications**
- Overhead line
- Service entry through overhead system
- Transition: Insulated overhead lines to cables
- Distribution transformers

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Raychem’s Bowthorpe EMP surge arresters provide active overvoltage protection that contributes directly to improved reliability of your system, reducing lost minutes and protecting expensive assets.

Bowthorpe EMP DA silicone surge arresters have been designed and tested to meet our customers demands with reliability and offering improved operational performance.

**Product Features**
- Tested in accordance with IEEE 62.11, 2005
- Direct molded housing to prevent moisture ingress
- Low residual voltages
- High-energy handling
- Safe non-shattering short circuit behavior to higher current levels
- Maintenance free
- Hydrophobic silicone/ EVA housing: (Tracking and erosion resistant)
- Excellent cantilever and tensile performance
- Quality design and manufacturing meeting international standards

**Raychem’s Bowthorpe OCP:**
- Raychem Bowthorpe ‘OCP’ silicone surge arresters have been designed and tested to meet our customers toughest environmental conditions and to meet the requirements of IEC60099-4. Our gapless zinc oxide polymeric arresters now have the OCP ranges builds on this experience and know how.
- Superior protection margins
- Direct molded housing to prevent moisture ingress
- Superior TOV performance

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**Motor Protection**
- Protects transformers and other equipments in station and distribution systems against the damage caused by environmental (especially lightning effects) and operational conditions.

**Indoor Switchgear**
- Protects distribution assets including transformers and cable-end terminations from lightning and switching surge related overvoltages.
Raychem Polymeric Surge Arrester is better than other Surge Arrester available in the market?

Raychem Surge Arrester has been developed using the knowledge accumulated over 35 years of internal materials science expertise and experience, resulting in a material with excellent tracking and erosion resistance, and known for operating in the world’s toughest environments.

Raychem’s Surge Arrester is made possible by:

Proven moisture sealing technology
- All arrester cores are encapsulated in silicon insulating housing
- Invisible interface prevents moisture from entering during severe thermal fluctuations due to normal climatic and energy absorption events

Polymer Housing
- Non-tracking and hydrophobic silicon insulating material is used
- Housing material has proven performance in long term TERT and UV aging tests and proven resistance to flammability

Fully integrated, single piece and void-less design
- Manufacturing integrates all components in a single piece
- Design is void and gap free ensuring peak performance under the harshest conditions

Disconnector (optional)
- Robust ground lead disconnector
- Reliable and consistent
- Offers operational reliability and consistency
- Can be shipped and stored restriction free

Safe mode of failure

Quality
- Manufacturing in ISO accredited production facility
- Perform 100% routine testing on arresters

Applications
- Arc Furnace
- Transformers
- Transmission Line Arresters
- Cable Terminations
- Substations

Product Features
- No air gap therefore no internal ionization
- Light weight compared to porcelain
- Ease of installation
- Non shattering housing
- Optimised voltage stress grading eliminates need to oversize stress grading ring, therefore the compact series parallel can be installed in tight spaces without infringing electrical air surge safety clearances
- The diameter of the series parallel design has been calculated to reduce the radial field stress to a minimum, even under adverse environmental conditions
- Can directly be mounted on equipments

Each surge arrester module is completely impervious to the ingress of moisture and utilises the high mechanical strength properties of the ZnO varistors bonded by cured resin impregnated glass fibre.

High Voltage Surge Arresters

Direct bonding of housing to fittings ensures optimum moisture barrier

Superior TERT performance

Excellent hydrophobicity

Safe short circuit failure
The Bowthorpe EMP surge counters use patented Planar Magnetic Current Sensing technology to accurately and reliably detect and measure current impulses.

The Bowthorpe EMP SC12 is a surge counter only, whilst the Bowthorpe EMP SC13 provides the additional measurement of total leakage current.

The Bowthorpe EMP SC14 and SC15 are the next generation surge monitors, being intelligent, they transmit data from the surge monitor to a receiving device (PAC-G ‘Programmable Access Controller - Gateway’). They utilise leading edge technologies in terms of reliability, accuracy and ease of use.

* Accessories available: Insulating Base, Dis connector up to Class 3

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