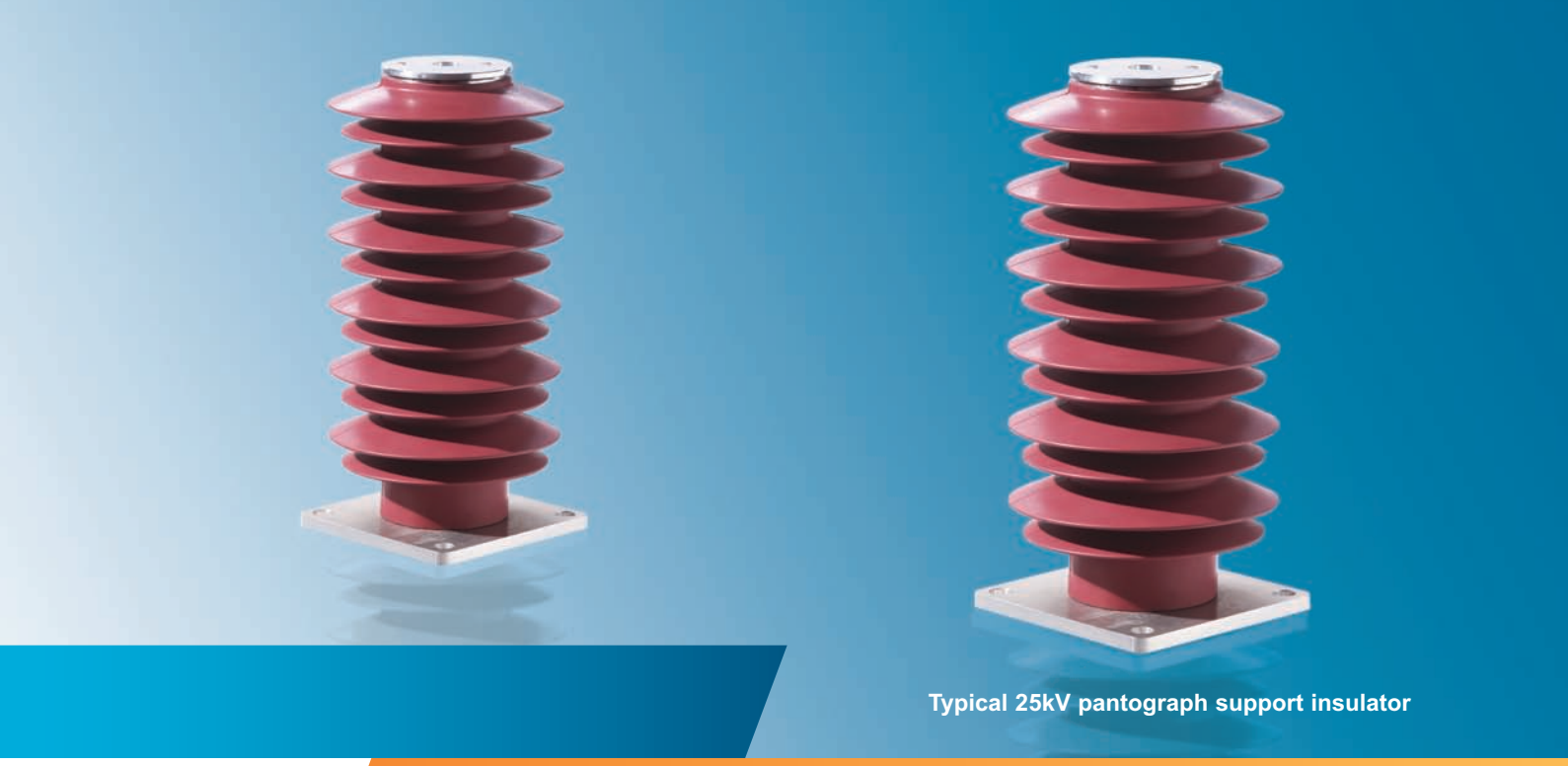


Typical 25kV pantograph support insulator

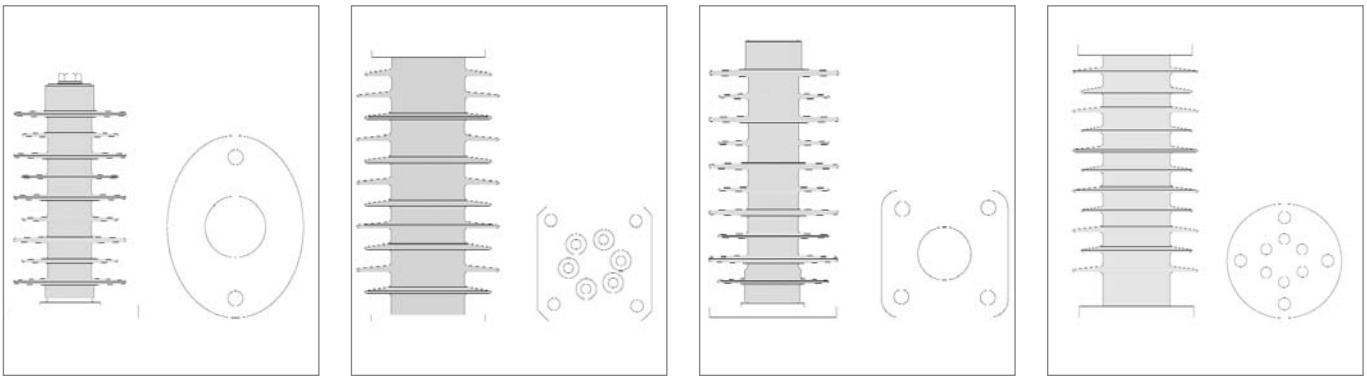
High Voltage Power Distribution for Rail Vehicles
HVIB High Voltage Polymeric Insulators

Tyco Electronics HVIB polymeric insulators provide robust, light weight designs for pantograph, busbar and equipment supports. Insulators are available for ac and dc systems.

Industry-leading Raychem high voltage insulation materials and well-proven polymer or glass fibre cores are combined to make insulators that are easy to install and completely reliable in the harsh rail environment.

Key Features:

- 1.5 / 3kV$_{dc}$,15 / 25kV$_{ac}$ polymeric insulators optimised for use in the rail environment
- Light weight and easy to handle compared to conventional ceramic alternatives
- Impact resistant and virtually unbreakable due to the use of polymeric materials
- Standard designs available but can be custom designed for specific applications
- Special applications such as air-feed insulators are available
- Modular construction allows small batch sizes and easy production of new designs
- Reliability demonstrated by over 20 years service history on high speed trains
- Maintenance free minimising total life-cycle costs



Different insulator constructions are used depending on application

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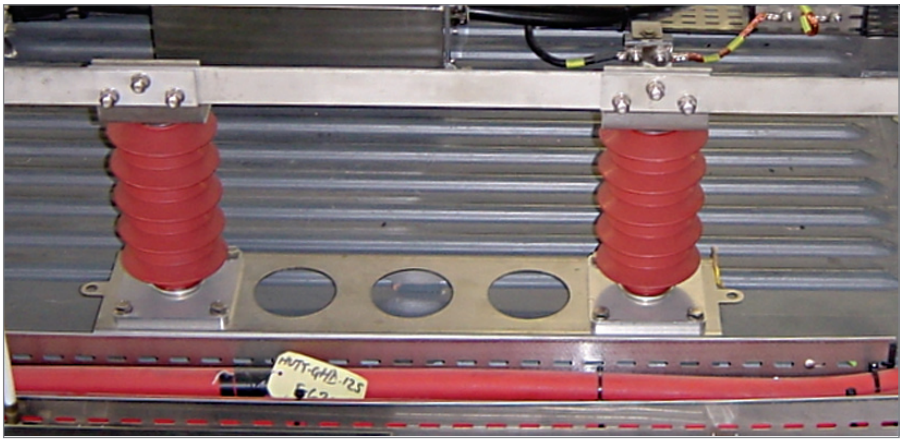
High Voltage Power Distribution for Rail Vehicles
HVIB High Voltage Polymeric Insulators

Applications:



HVIB insulators are designed to support pantographs, busbars and other high voltage electric equipment on locomotives, multiple units and high speed trains. Metal end fittings are selected from a wide range of available standards or can be custom designed.

Tyco can also provide insulators for special applications such as pantograph air-feed insulators. Air-feed insulators house helically wound air-lines encapsulated by Raychem high voltage materials giving a long internal creepage path that is free from moisture.

Typical Ratings:

Typical ratings for a 25kV support insulator

Characteristic	Value
Working voltage	25kV nom
AC withstand voltage	>75 kV
Impulse withstand voltage	>170 kV
Operating temperature	-40 to +80°C
Height	300 – 400 mm
Outer housing material	Raychem high voltage polyolefin
Typical strike distance	350 – 450 mm
Typical creepage	650 -1000 mm
Typical core diameter	40 – 80 mm
End fittings	Various designs to customer specification
Cantilever	10 kN MAX working
Tensile	10 kN MAX working
Weight	5.5 kg

Testing

HVIB insulators have been subjected to a full series of electrical, mechanical and environmental qualification tests to major rail standards.

Batches of insulators are serial numbered to provide complete traceability.

Custom Design Service

Although standard insulator designs are available, it is possible to tailor the designs for a specific application. By providing this design service, Tyco can supply all of your insulator needs for new build and retrofit applications.

Individual designs can be modelled in most major 2D or 3D drawing packages.

For further information contact your local Tyco Electronics sales office or:

tycoelectronics.com

Literature No: 3-1773447-0. September 2007

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