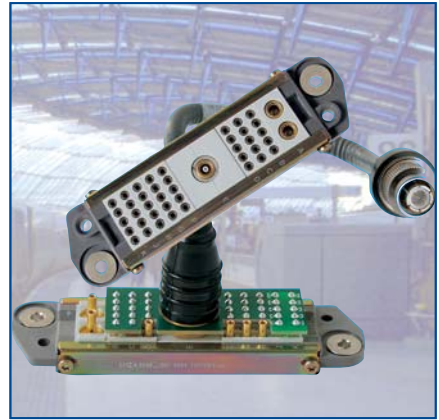




HIGH RELIABILITY CONNECTORS FOR RAILWAY APPLICATIONS

HYPERTAC CONNECTORS

A WORLD LEADING PROVIDER

The rail industry needs a partner to create innovative interconnection solutions that ensure the necessary safety, performance and passenger comfort, whilst reducing cost of ownership.

Hypertac is a world leading provider of high performance electrical connectors and interconnect solutions for the Rail Transportation market, with design and manufacturing sites in Europe, America and Asia and a worldwide network of agents and distributors.

Hypertac offers a wide range of signal, power and coax connectors, cable assemblies and integrated function systems to meet the unique requirements of the rail transport industry, for traction, signalling and track applications. High speed and filtered solutions are also offered under the brand of our sister company Sabritec. Hypertac and Sabritec are part of the Connector Technology Group of Smiths Interconnect.

OUR VALUES

COOPERATION

The relationship with our customers and suppliers is based on partnership, team work attitude and individual creativity.

INNOVATION

Innovation is the result of new ideas implemented by state-of-the-art design and development tools.

RELIABILITY

All our products are based on a high level of quality, reliability and precision, due to the use of Hypertac hyperboloid contact technology.

SERVICE

Value added electrical and electronic interconnect solutions and a worldwide distribution network are the essential components of our performance.

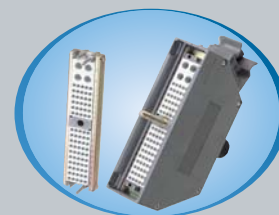
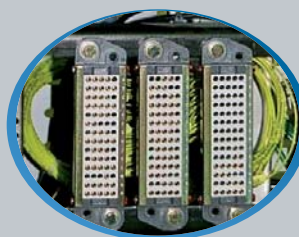
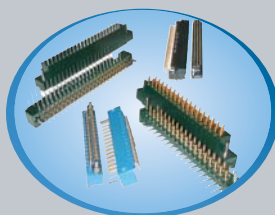
EXPERIENCE

Customer satisfaction is our utmost goal. Our experience in the Rail Transportation applications ensures proven benefit to our customers. Our products meet your special requirements by an optimised cost performance ratio.

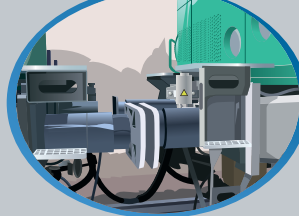
QUALITY AND ENVIRONMENT

Active quality and environmental management rank first and foremost in all respects. Hypertac certification to DIN EN ISO 9001 and DIN EN ISO 14001 is the result.

ON-BOARD EQUIPMENT

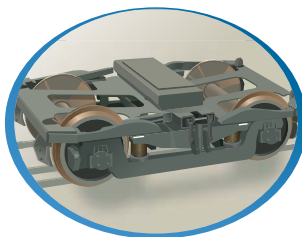


INTERCOACH

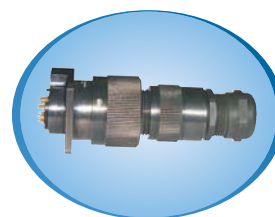
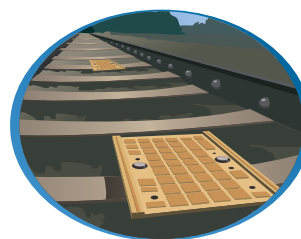


FOR THE RAIL TRANSPORTATION

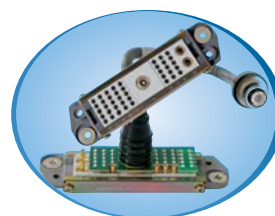
OUTBOARD & BOGIES



SIGNALLING



COMMUNICATIONS



DELIVERING RELIABILITY TO RAIL APPLICATIONS

OUR INTERCONNECT SOLUTIONS

The Hypertac range includes printed circuit board, modular, rectangular and circular connectors, rack and panel, power connectors and couplers. High speed connectors and contacts (Fibre channel, Firewire, Fibre Optics, Ethernet) are also available under Sabritec* brand name.

Hypertac also offers a number of value added services to customers, including cable assembly, prototyping, instrumentation housing, electrical modelling and testing, and equipment qualification.

OUR CAPABILITIES

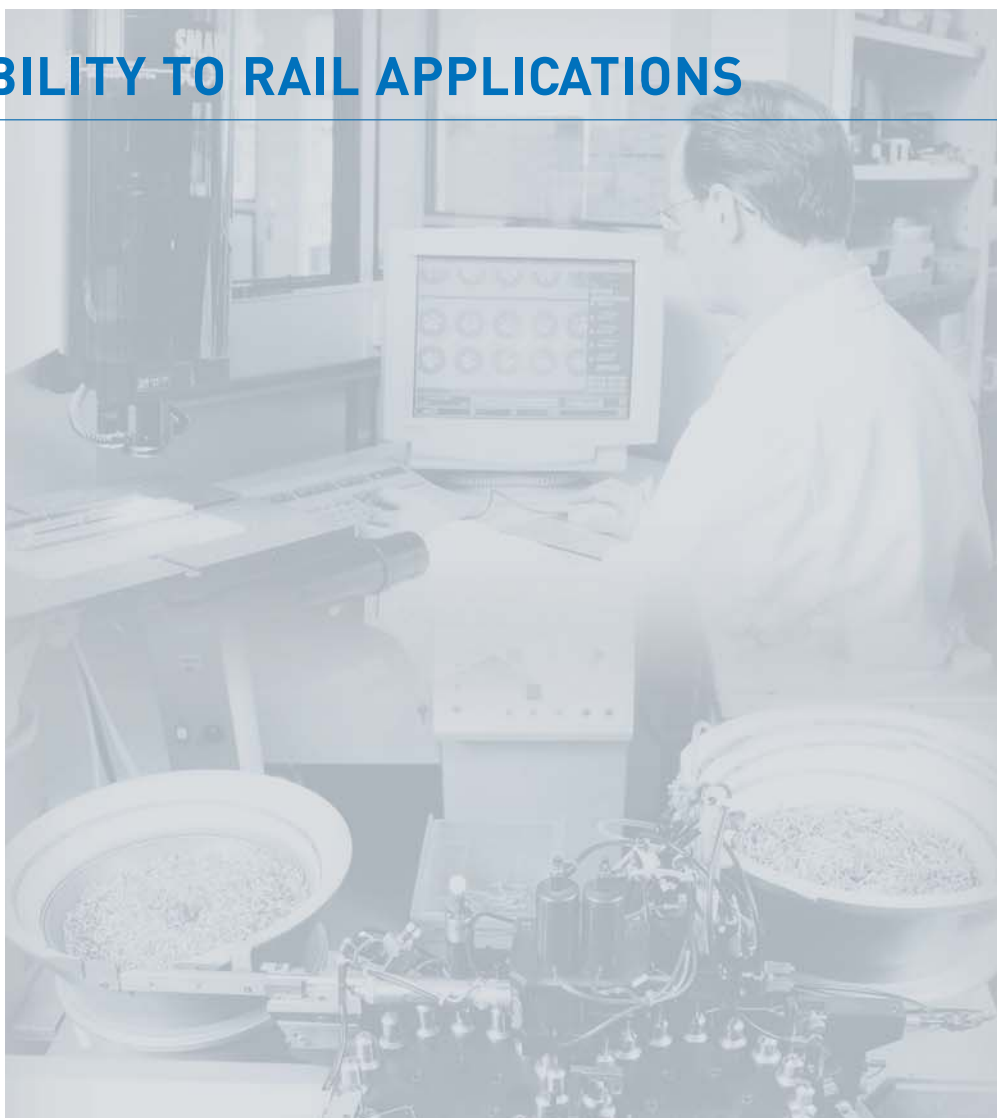
- Engineering, Design and Development
- CAD/CAM and Solid Modelling
- Prototyping
- Finite Element Analysis
- Extensive Machine Shops
- Contact Manufacturing
- Connector and Cable Assembly
- System Integration
- Qualification, Electrical and Mechanical Testing
- Project Management

OUR STRENGTHS

- Leading Edge Technologies
- Standard and Custom Interconnect Solutions
- Global Presence, Local Support and Design-in
- Flexible Manufacturing
- Strong Parent Company



*Sabritec and Hypertac have a partnership agreement enabling Hypertac to design, manufacture and distribute Sabritec products throughout Europe.



OUR APPROVALS / CONFORMITY

Our products conform to the main international standards and have earned the trust of the railway industry.

- NF F61-030; 032
- NF F16-101; 102
- NF-C 93421
- IEEE-1101.2 - '92
- IEC 1076-4 101
- DIN 41612
- DIN 43652
- HE 501
- HE 704
- UTE C93-425
- RoHS

Hypertac has also started the process of certification to IRIS Standard.

Hypertac contact and connector materials and plating comply with human health, environmental and ecological regulations.

RAIL TRACTION



QUALITY RANKS FIRST

The extreme operating conditions within railway applications demand the highest performance components offering ultra high reliability. Our experience in signal, power and high speed connectors for rolling stock applications result in customer-driven, reliable solutions that are optimised to mitigate the effects of shock, vibration and fretting corrosion.



Our connectivity solutions are designed to meet the requirements of each specific area of the train, locomotive, metro, tram:

Closed electrical operating area

- Indoor vehicle cubicle
- Outdoor vehicle cubicle
- Electronic racks and cabinets
- Machinery compartment

Cabin and interiors

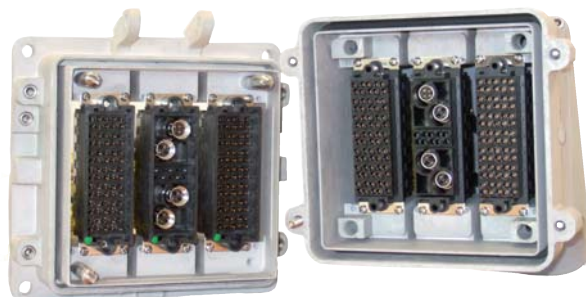
- Passenger compartment
- Driver cabin
- Passenger information systems

Outdoor static applications

- Under car body
- Roof

Outdoor dynamic applications

- Inter-vehicle
- Bogies
- Axles
- Braking systems



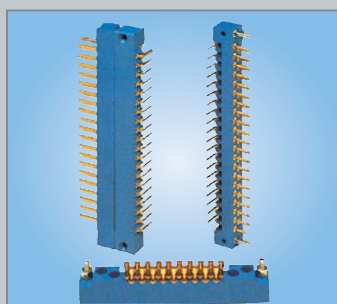
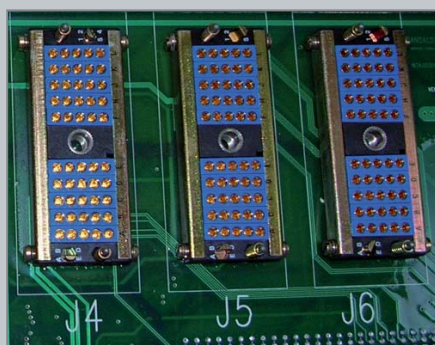
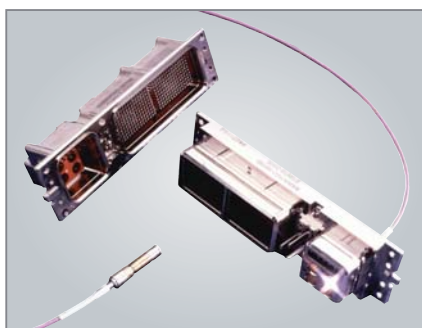
SIGNALLING

ENSURING SAFETY

Hypertac is actively involved in the development of standard and custom connectors for signalling applications, with particular reference to the ERTMS project (European Railway Traffic Management System), targeted to ensure interoperability throughout the European rail network.



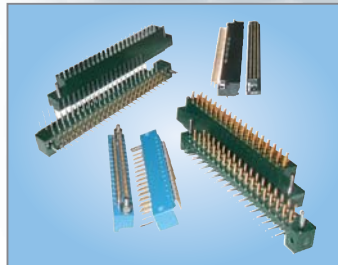
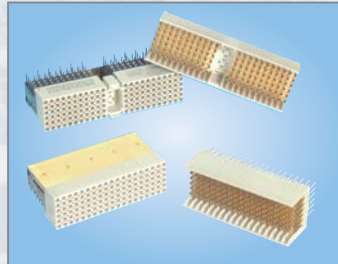
Hypertac connectors comply with the European normative of cable sizes. This is an important value that Hypertac adds to its offering since cable assembly is part of the chain that ensures that ERTMS equipment will be compatible with the various transmission systems (GSM, radio, etc) encountered when crossing between European countries.



INFRASTRUCTURES

SUPERIOR PERFORMANCE

The hyperboloid socket technology has been specifically designed to withstand high shock and vibration for ultimate circuit integrity and extending in-service life. Hypertac connector solutions ensure the performance requirements of communication systems alongside the track and of the rail infrastructure. The extensive range of Hypertac products and value-added solutions has been used on rail systems globally.



HYPERTAC® IS AN ADVANCED CONTACT DESIGN THAT SATISFIES PERFORMANCE REQUIREMENTS PREVIOUSLY CONSIDERED IMPOSSIBLE.

The shape of the contact sleeve is formed by wires strung at an angle to the socket's axis. When the pin is inserted into this sleeve, the wires stretch around it, providing a high number of linear contact paths.

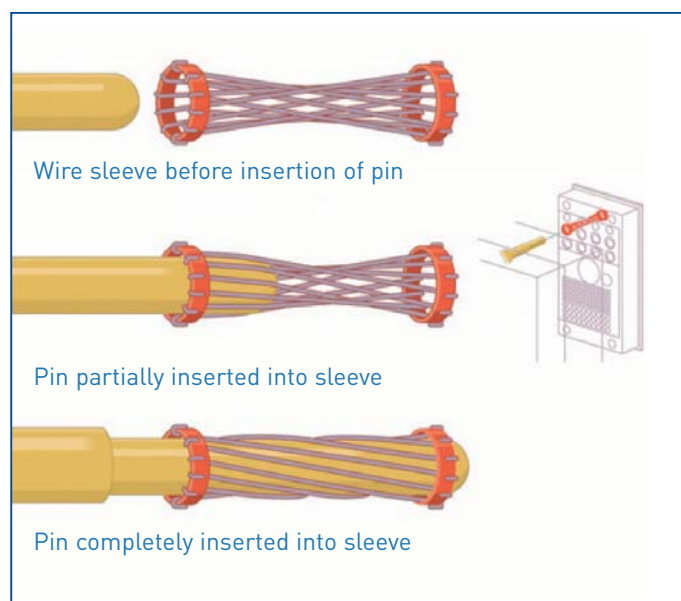
Performance features are:

- Low insertion/extraction forces
- Shock and vibration proof
- High current and voltage ratings
- Low electrical contact resistance
- Long life and low rate of wear

Hypertac contacts and connectors have been tested to:

- Sine vibrations (according to CEI 68-2-6)
20 g from 10 to 2,000 Hz
- Random vibrations (according to CEI 68-2-35)
0.5 g² / Hz from 10 to 2,000 Hz
- Shock (according to CEI 68-2-27)
250 g during 0.4 ms (1/2 sine-wave)

The results of the tests carried out on Hypertac contacts show no discontinuity when measured down to 2ns and a stable contact resistance.



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