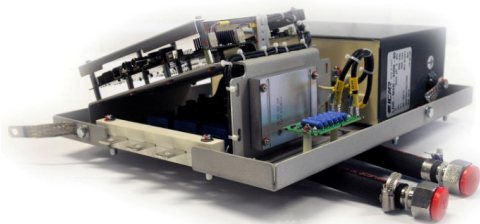




## Strukton Rolling Stock

### Traction and auxiliary power systems for rolling stock



*Example of light-weight and compact IGBT power module with water cooling*



*Example of integrated LRT propulsion system, <100 kg system weight*

#### Highlights

- Independent Dutch supplier
- Both new rolling stock and refurbishment
- Form-Fit-Function replacements, to solve spare part obsolescence
- Capable of powering both AC and DC motors

#### Product portfolio

Strukton Rolling Stock's product portfolio contains a range of electrical and electrotechnical systems:

- Modern, modular IGBT-based power modules (air cooled, water cooled), for example for refurbishment
- Inverters, auxiliary power systems, battery chargers, etc.
- Junction boxes / high-voltage junction boxes
- Train control and management systems
- Complete wiring / cabling, for both newly built vehicles and upgrades



*In-house assembly for quality continuity*

#### Company characteristics

- Close cooperation with the customer
- Cost efficient production solutions
- Reduction of maintenance costs, number of spare parts and weight
- Energy reduction
- Continuous development



**Strukton**  
Rail

## Technical highlights

- Modular design and configuration:  
Proven components can be quickly combined to meet various customer requirements or train configurations
- Solution to spare part obsolescence:  
Functional replacement of out-of-production electrical components by modern technology, with the same form fit-function
- Identical arrangement of modules:  
The new solution has precisely the same mounting points and connectors as the classic systems  
→ efficient replacement
- Combination of modern AC power electronics with the original DC motors:  
The propulsion system can drive both the classic DC motor as well as a future upgrade to AC motors  
→ investments spread over time
- Design philosophy considering all life cycle aspects:  
Efficient production, assembly, installation, operation and maintenance
- Efficient diagnostics & fault finding
- Air or water cooling (as required)

## Some references

- Chicago O'Hare Airport, USA: new traction system for airport people mover
- Tisséo Toulouse, France: new traction and auxiliary power system for automatic metro (VAL 206)
- BHEL Industry, India: development & delivery of complete IGBT traction and auxiliary power systems (6000hp Locomotive, EMU), including TCMS
- TransNet, South Africa: replacing of rotating converter with static converter in freight locomotive
- Scomi, Malaysia: traction system and auxiliary power for newly built monorails
- Bombardier, Germany: cabling for regional trains
- Netherlands Railways: various systems for passenger trains



*Providing new lease of life to valuable old equipment*



*Example of integrated propulsion system to solve spare part obsolescence*



*Examples of compact, auxiliary systems with various cooling methods*

## About Strukton Rolling Stock

Strukton Rolling Stock focuses specifically on refurbishment and new production of traction installations and other electrotechnical systems for all types of rolling stock (metros, trams, passenger trains and locomotives).

The main focus is to improve reliability, availability and maintainability. The engineering roots go back to the early 1900s, and result today in tailor-made solutions.

Strukton Rolling Stock's parent company Strukton Rail is a full-service provider for rail systems in Europe, with a strong financial and technical foundation. Strukton Rail is Strukton's largest division, responsible for almost half of its revenue.

Strukton has around 6,000 employees and annual revenues well over 1 billion Euros. Strukton is part of Oranjewoud N.V., which is listed on the Euronext N.V. stock exchange and is owned by Centric B.V, counting approximately 9,500 employees.



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