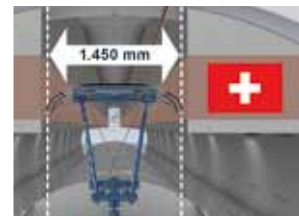
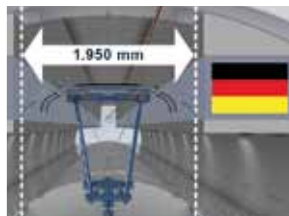




VARIOPANTO®

Single-arm Pantograph
for Cross-border Rail Traffic



STEMMANN PRODUCTS

QUALITY MADE IN GERMANY

Single-arm pantograph for cross-border rail traffic

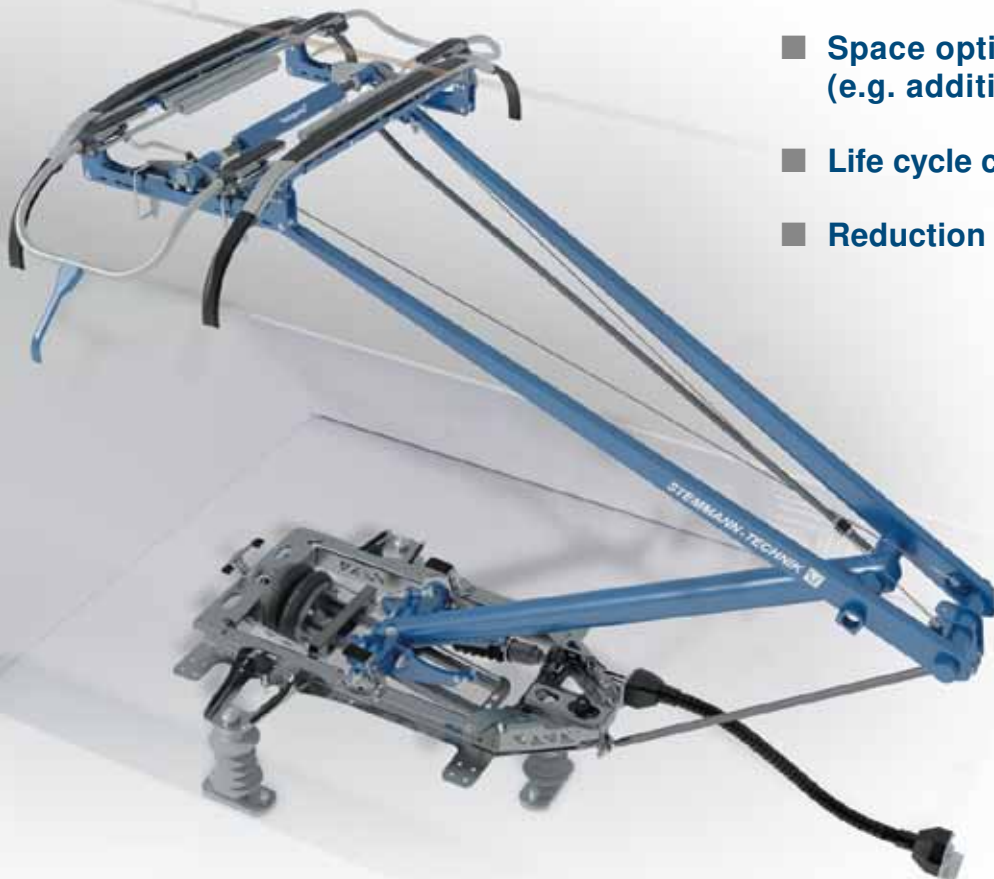
Electrically powered rail cars such as locomotives, EMUs and other vehicles are increasingly used in international border traffic. But as power supply conditions and overhead contact systems differ from one country to the next, each system requires the construction of an individual pantograph system.

In answer to this challenge we have developed the Variopanto. Its collector head can extend to fit wide overhead contact profiles and retract to match narrow ones. The flexible collector head alignment can adjust to overhead profiles between 1950 mm and 1450 mm in width.

Not only the profiles are mechanically aligned, the contact strip section of the moveable end horns is also monitored by a pneumatic ADD (Automatic Dropping Device) and the width of the contact strip adjusts according to the requirements. The collector head is aligned by means of a pneumatic positioning device which is operated with the already existing compressed air.

Various safety aspects were taken into consideration and, have been integrated in the Variopanto's collector head as well as in its valve plate. When raised, the pneumatic contact strip monitoring (ADD) function becomes effective.

- **The Variopanto® replaces two traditional pantographs**
- **Adjustable collector head width for different overhead contact profiles**
- **Reduction of weight and installation space**
- **Space optimization in the cabin (e.g. additional seats)**
- **Life cycle cost optimization**
- **Reduction of noise**



Variopanto® with adjustable collector head width Our Panto300® forms the basis

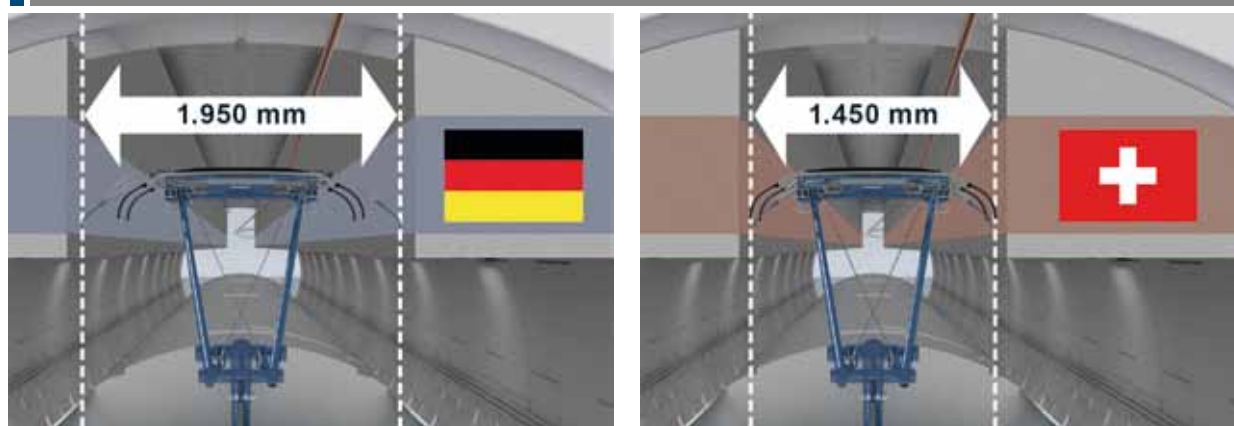
The Variopanto replaces two traditional pantographs and the normally required circuit breaker as well as other connecting and fastening elements. This saves more than 50% weight and installation space. Depending on the train concept, additional seating space can be gained. At the same time, the optimized constructive design results in lower noise emissions. It also cuts down the cost of maintenance and, consequently, reduces life cycle costs (LCC).

The Variopanto is designed for interoperable regional and intercity traffic with a maximum speed of 200 km/h. However, the collector head can be easily adapted to match two TSI-compatible collector head widths of 1600 mm and 1950 mm. The Variopanto's operating principle can be expanded to suit more than two positions. This allows unrestricted corridor transportation all over Europe.

The Variopanto is mainly made of standardized components coming from our product family Panto300 which results in cost-effective manufacturing and makes it easy to keep stock for spare parts. Even the mechanical and electrical interface with the vehicle's roof, based on TS EN 50206-3 is identical to the Panto300.

This trend-setting concept allows you to upgrade existing fleets with the Variopanto®, and get ready for international traffic.

COMPARISON OF THE OVERHEAD SYSTEMS



TECHNICAL DATA

Design	Single-arm Pantograph
Type	Variopanto® (Typ = Panto300.00)
Nominal speed	200 km/h
Design speed	275 km/h
Nominal system voltage	15 kV (max. 25 kV)
Air rising actuator	Air bellow system



VARIOPANTO®

QUALITY MADE IN GERMANY



INDUSTRIAL PRODUCTS · INDUSTRIEPRODUKTE



CABLE FESTOON SYSTEMS
LEITUNGSWAGEN-SYSTEME



CABLE REELS
LEITUNGSTROMMELN



SLIP RING ASSEMBLIES
SCHLEIFRINGÜBERTRAGER



CONDUCTOR LINES
SCHLEIFLEITUNGEN

RAILWAY PRODUCTS · BAHNPRODUKTE



ROOF-MOUNTED PANTOGRAPHS
DACHSTROMABNEHMER



3rd RAIL CURRENT COLLECTORS
DRITTE-SCHIENE-STROMABNEHMER



frost® GROUND CONTACTS
frost® ERDUNGSKONTAKTE



STINGER SYSTEMS
STINGER-SYSTEME



STEMMANN-TECHNIK GmbH

Niedersachsenstr. 2
48465 Schüttorf · Germany
PO-Box · Postfach : 1460
Phone : +49 5923 81 - 0
Fax : +49 5923 81 - 100
sales@stemmann.de

