

Play it safe

With Smart Solutions



Schaltbau GmbH Group

Company profile 2017



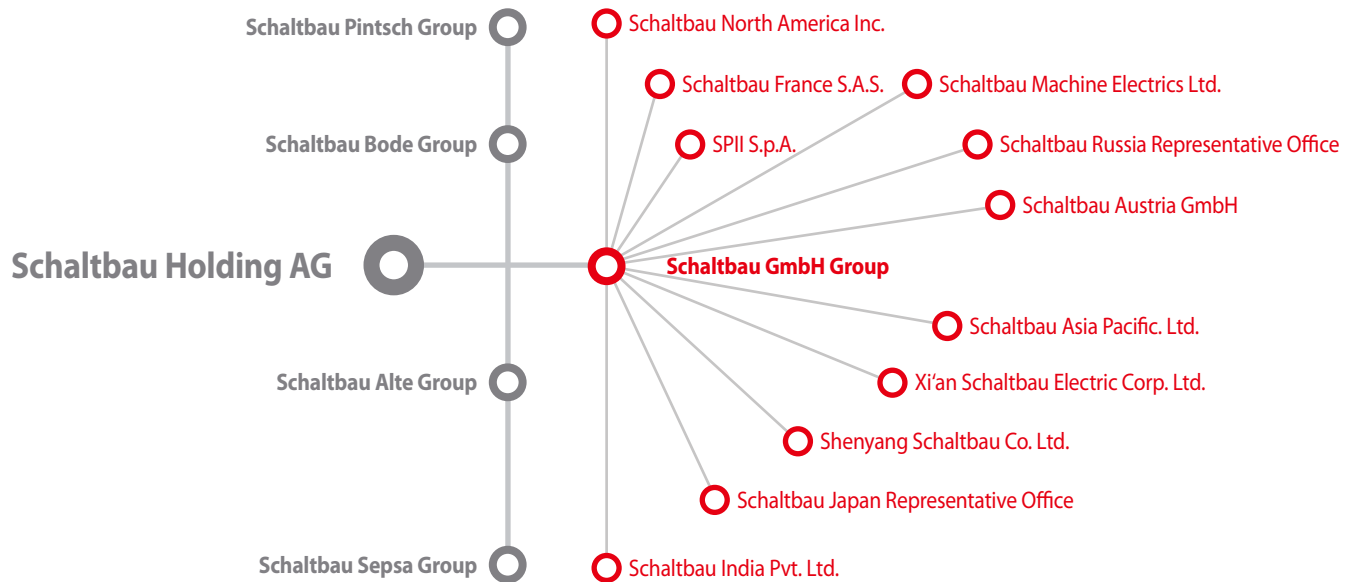


Play it safe

In order to guarantee maximum safety, Schaltbau products are subject to a strict quality and failure management. This enables us to standardize and optimize our processes and keep the failure rate low. Thus Schaltbau fulfils all the requirements for continuous product improvements – with a view to safety.

Schaltbau Group

Schaltbau Holding AG and Schaltbau GmbH Group



Based in Europe, globally present

The various companies in the Schaltbau Group operate more than 35 sales and production sites in 17 different countries worldwide. They also work together with external sales partners.

With their specialised knowledge and a high degree of product innovation, the companies in our Group have worked hard to win the confidence of their customers and strive continually to strengthen their current market position through well-targeted research and development activities. Organic growth is the result of innovative products and solutions, the concentration on new target groups and greater market penetration.

Schaltbau Holding AG

A leading technology supplier

The Schaltbau Group is among the world's leading suppliers in the fields of rolling stock, rail infrastructure, automotive and the capital goods industry. With over 30 subsidiaries and more than 3,000 employees worldwide, we have forged ourselves a reputation as partner to major rail systems manufacturers and operators. Furthermore, our technical safety products are integral parts in applications such as buses and electric vehicles, in container cranes and wind turbines.



Highly specialised in developing and manufacturing safety- and security-relevant applications

Schaltbau Group companies are highly specialised in developing and manufacturing safety- and security-relevant applications, particularly for the controlling and surveillance of rolling stock and rail infrastructure. The Schaltbau Group is therefore in a key technological position to make a crucial contribution to the digitalisation of the rail sector.

Whether it's about improving how rolling stock communicates with stationary security and control technology or providing additional services for passengers, we support railway operators in their efforts to make both local and long-distance public transportation even more attractive and boost efficiency by developing innovative products.

The Schaltbau Group employs over 3,000 people worldwide. It operates major production and service locations in Germany, Spain, Poland, Italy, the United Kingdom, China and the USA.

Business units

Everything from one source

The operational business of the Schaltbau Group is divided into three segments: Mobile Transportation Technology, Stationary Transportation Technology – subdivided into the two business fields of Rail Infrastructure and Brake Systems – and the Components segment. The segments work together closely with the aim of supplying customers comprehensively from one single source and leveraging synergies.

Schaltbau Holding AG

Facts and Figures:

Turnover 2016: €509.1m

Staff 2016: 3,370

Mobile Transportation Technology



Stationary Transportation Technology



Components



Schaltbau Bode Group

- Door systems for rail vehicles, bus and automotive
- Interiors and exteriors for rail vehicles and buses
- Service and Refurbishment

Schaltbau Alte Group

- Sanitary systems for rail vehicles
- HVAC for rail vehicles

Schaltbau Sepsa Group

- Auxiliary power for rail vehicles
- Information and communication systems

Schaltbau Pintsch Group

Rail Infrastructure

- Signal technology
- Point heating systems
- Shunting technology
- Tunnel security lighting
- Platform screen doors

Brake systems for

- Cranes
- Wind energy
- And other industrial applications

Schaltbau GmbH Group

Electromechanical components for

- Rail vehicles
- Energy generation
- Material handling
- And other industrial applications

Driver desk and cab for

- Rail vehicles

Schaltbau GmbH Group

Components and customer specific solutions

The Schaltbau GmbH Group develops and produces connectors, snap-action switches and contactors as well as electrical components such as toggle switches, master controllers and driver desk equipment for a broad range of applications in the rail sector and industry. The Italian subsidiary SPIL specialises in fully integrated driver's cabs for railway vehicles.



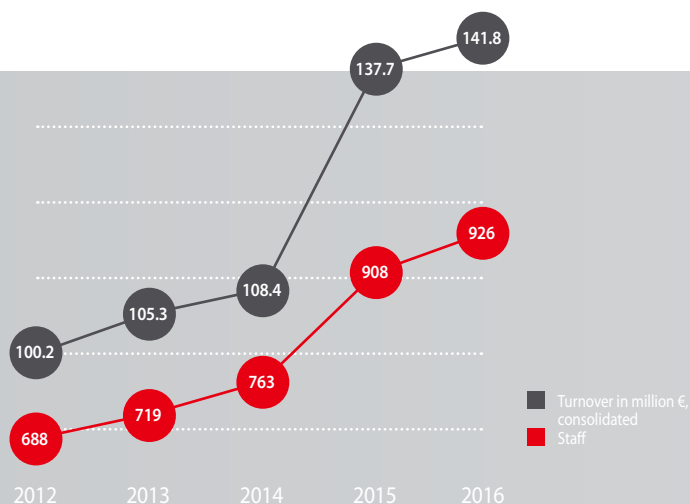
Locations: Germany, Austria, France, UK, Italy, Russia, China, India, Japan, USA

Headquarters: Munich, Germany

Turnover: 2016: €141.8m consolidated

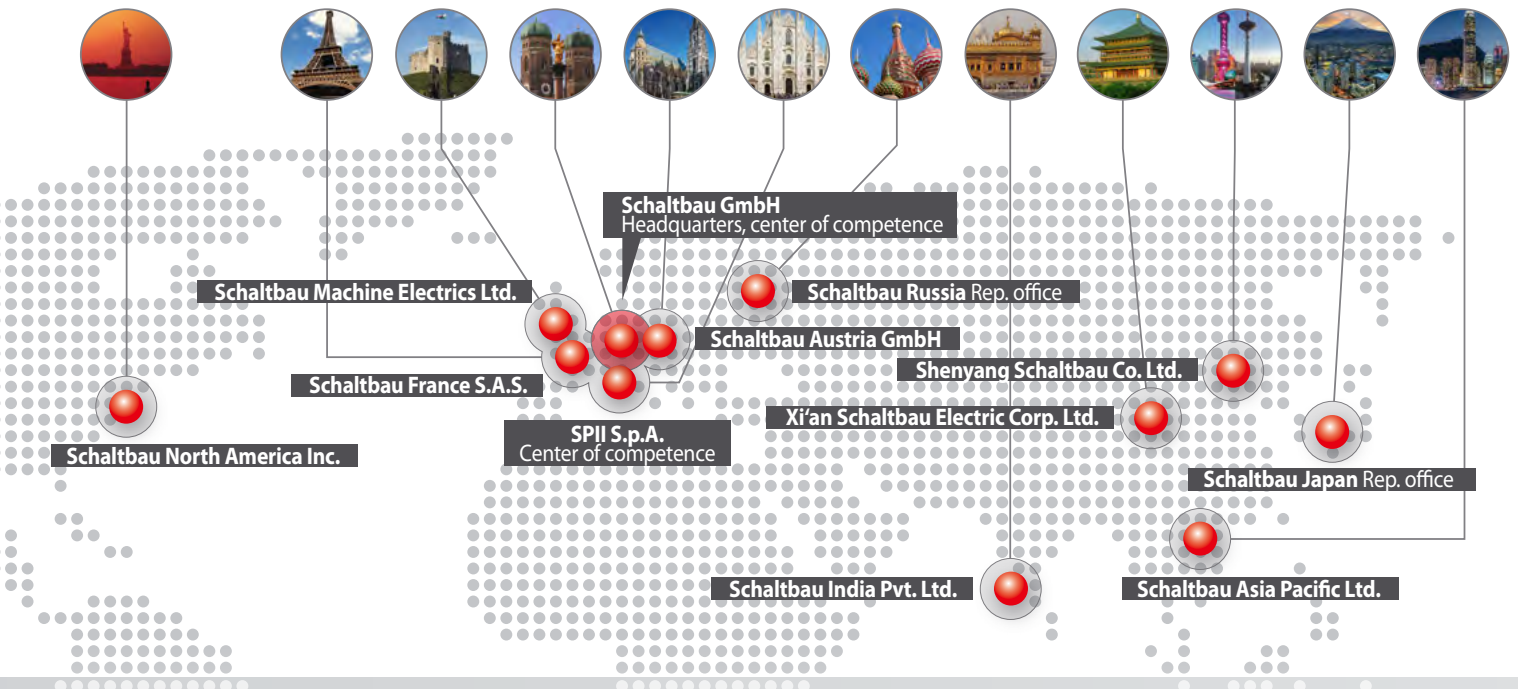
Staff: 2016: 926

Markets: Electromechanical components and customer specific solutions for railway engineering, material handling, renewables, and automation



Schaltbau worldwide

Subsidiaries, representative offices, sales partners



Worldwide 11 subsidiaries/representative offices and more than 60 sales partners

Algeria	SAR	India	Mexico	Singapore	Thailand
Australia	Croatia	Indonesia	New Zealand	Slovakia	The Netherlands
Austria	Czech Republic	Ireland	Norway	Slovenia	Tunesia
Belarus	Denmark	Italy	Philippines	South Africa	Turkey
Belgium	Finland	Japan	Poland	South Korea	Ukraine
Brazil	France	Latvia	Portugal	Spain	United Kingdom
Bulgaria	Germany	Lybia	Romania	Sweden	USA
Canada	Greece	Malaysia	Russia	Switzerland	Vietnam
China PR, Hong Kong	Hungary	Marocco	Serbia	Taiwan	

Close to the customer worldwide

Companies, representative offices



Schaltbau GmbH
Head quarters



Schaltbau
France S.A.S.



Schaltbau
Machine Electrics Ltd.



Schaltbau
Austria GmbH



SPII S.p.A.



Schaltbau Russland
Representative Office

Locations

Germany

- Munich (HQ)
- Velden
- Aldersbach

France

- Paris-Argenteuil

United Kingdom

- Cwmbran

Austria

- Vienna

Italy

- Saronno

Russia

- Moscow

Activities

- Center of competence connectors, switches, contactors
- Technical support, Sales
- Customizing
- Manufacture
- Assembly
- Service

- Technical support, Sales
- Customizing
- Manufacture
- Assembly
- Service

- Technical support, Sales
- Manufacture
- Assembly
- Service

- Technical support, Sales
- Service

- Center of competence drivers cab equipment
- Technical support, Sales
- Customizing
- Manufacture
- Assembly
- Service

- Technical support, representative functions

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www.spii.it

www.schaltbau.ru



**Schaltbau
North America Inc.**



**Schaltbau
Asia Pacific Ltd.**



**Xi'an Schaltbau
Electric Corp. Ltd.**



**Shenyang Schaltbau
Electrical Co. Ltd.**



**Schaltbau Japan
Representative Office**



**Schaltbau
India Pvt. Ltd.**

Locations

USA
● Hauppauge (NY)

PR China
● Hong Kong

PR China
● Xi'an (Shaanxi)

PR China
● Shenyang (Liaoning)
● Shanghai

Japan
● Yokohama

India
● Thane (Mumbai)

Activities

- Technical support, Sales
- Customizing
- Manufacture
- Assembly
- Service

- Technical support, Sales

- Technical support, Sales
- Customizing
- Manufacture
- Assembly
- Service

- Technical support, Sales
- Manufacture
- Assembly
- Service

- Technical support, Representative functions

- Technical support, Sales
- Assembly
- Service

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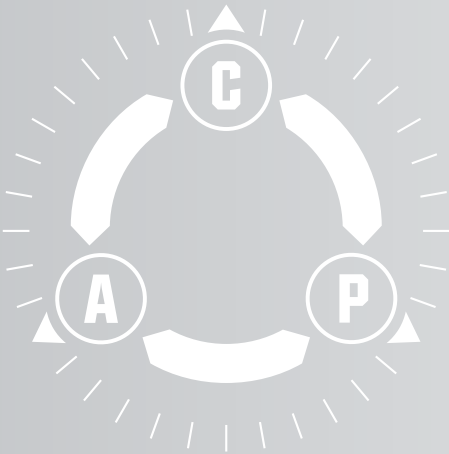
www.schaltbau.com.hk

www.xian-schaltbau.com

www.schaltbau-gmbh.cn

www.schaltbau.jp

www.schaltbau.co.in



Consulting

Experts are the best consultants.

Schaltbau is a specialist in electro-mechanical components and customer specific solutions with decades of experience in development and manufacture.



Application

No need to reinvent the wheel!

Schaltbau sales engineers have access to a treasure trove of knowledge and experience including a host of realized applications. Thus you will benefit from analogies and empirical data that may be of some value for your application.



Product

The right solution

may eventually be an item from our product line, a special variant with little need for adaptation, or a completely new design – because customizing is standard with us!

The Schaltbau 360° competence

Consulting



Expertise

Benefit from the Schaltbau know-how



Consulting

Experienced sales engineers work on-site with you



Solution

Cooperation spells success



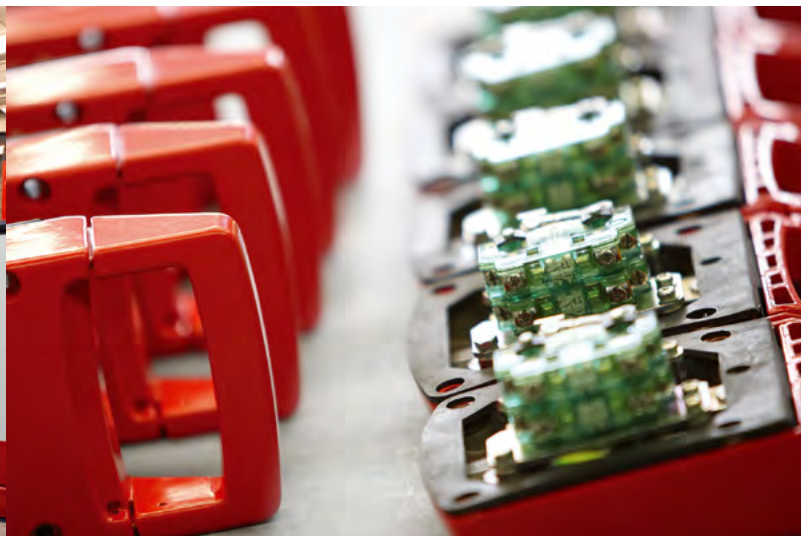
Application

- ▶ **Customer**
Added value and maximum benefit for your application
- ▶ **Safe**
Safety components of approved quality
- ▶ **Cost-effective**
Robust, no maintenance, long life

Product

3 possibilities – 1 solution

- ▶ **Pick-to-order**
Finished item from our product line
- ▶ **Configure-to-order**
Well-proven and tested special variant with little need of adaptation
- ▶ **Design-to-order**
Completely new development to customer requirements



Markets and applications

Schaltbau – expert at the customer's side

Our diverse solutions for applications are used in a whole host of systems around the globe. Safety and reliability are our greatest good. We contribute our experience from railway engineering to other markets. Our products are designed to protect your systems and ensure personal safety.

Electromechanical components and customer specific solutions from Schaltbau are designed for applications such as:

Vehicle batteries ■ Charging systems & hoists ■
Electric forklifts ■ Stationary cranes ■
Cleaning machines and sweepers ■ Chargers ■
High-rack stackers ■ Electric vehicles



Material Handling
More power for fast charging



 www.materialhandling.schaltbau.com

Mechanical and plant engineering ■ Environmental
engineering ■ Wrapping machines ■ Print & Paper ■
Measurement and control technology ■
Medical engineering ■ Communications technology



Industrial Solutions
Safety for men and machine



 www.industry.schaltbau.com



Transportation Technology

Customizing is our standard



 www.rail.schaltbau.com

Light rail vehicles ■ Diesel locomotives ■ Electric locomotives ■ EMUs ■ DMUs ■ Underground trains ■ Suburban trains ■ Passenger coaches ■ High-speed trains



New Energy

Special switchgear solutions



 www.energy.schaltbau.com

Central inverters ■ Fuel cells ■ Photovoltaic systems ■ Geothermal energy ■ Bioenergy ■ Wind turbines ■ Medium-voltage installations ■ Off-Grid systems ■ Battery energy storages



Connectors

Connecting reliably under extreme conditions. High-quality connectors for industry, transportation and telecommunications.

Snap-action switches

Switching with precision when it really matters. Our snap-action switches comply with high standards for safety circuits.



Products

Decades of experience in engineering and production

Schaltbau is a brand name for connectors, snap-action switches, contactors, electrics for rolling stock and complete drivers cab equipment that fully conform to the highest safety standards. Thus you will find worldwide in all branches of industry, in which electrical systems have to be connected, switched and controlled reliably under harsh ambient conditions, electromechanical components and customer specific solutions from Schaltbau.

DC and AC contactors

Reliably extinguishing the electric arc.
Users in industry and the rail sector benefit from our know-how in switching high currents.

Control devices

Arriving punctually.
Our electrics for rolling stock make railway vehicles both safe and comfortable.

Service


Feel in good hands.
Planned maintenance and modernisation.
Our know-how ensures safe operation.



WE PROVIDE RELIABLE CONNECTIONS



Connectors must ensure reliable transmission of energy and signals – coping with high voltages, harsh environments and the rough conditions of rail traffic. Connectors from Schaltbau are especially designed to meet these requirements: Where safety and health of human beings are dependent on technology – as in transportation, mechanical engineering, lighting, food processing, battery charging, mining or offshore operations – the rugged heavy-duty connectors from Schaltbau are first choice.

For further informationen visit
 www.schaltbau.info/connectors

Connectors

Schaltbau connectors are characterized by: long life and rugged design, up to 10,000 mating cycles, tightness up to IP69K, high material and temperature resistance as well as resistance to shock and vibration.

This makes them ideally suited to be used for years of continuous operation and under harsh environmental conditions.

Reliable connections

- for transportation systems
- to railway and industry standards
- for signal and data transmission
- for industrial trucks
- to customer requirements



WE GUARANTEE DOUBLE SAFETY




According to the internationally accepted rules of scuba diving it is not allowed for safety reasons to dive without a buddy (second diver).

Likewise, Schaltbau has developed such a buddy for the micro switch since 1975:

a snap-action switch with double-break contacts and positive opening operation, which guarantees that the contacts will open, even when they have become welded together or the spring of the snap mechanism has broken. So there is a reliable alternative to the micro switch – the switch with double safety from Schaltbau.

For more information visit

 www.schaltbau.info/switches

Snap-action switches

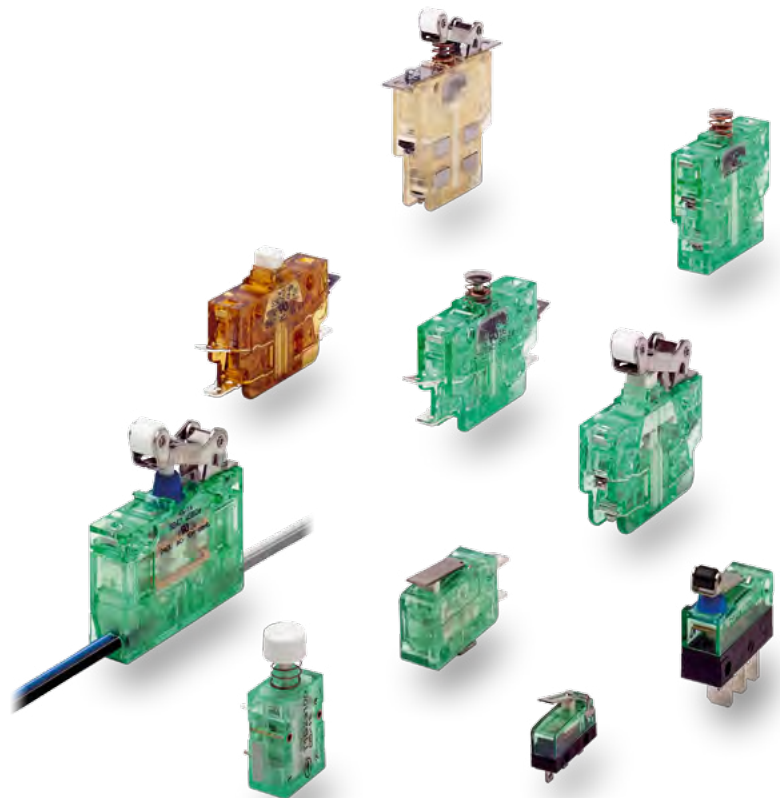
Featuring double-break contacts and positive opening operation, snap-action switches from Schaltbau have proven for 40 years to be the ideal components for failsafe systems. Both a high breaking capacity and a design life of up to 10 million operating cycles provide solid reasons to make Schaltbau switches the components of choice for realising the functional safety of machines and systems.



Positive opening operation:
Reliable breaking of the NC circuit even if the contacts have become welded together.

Switches for failsafe systems


- Double-break contacts and positive opening operation
- Variants for extreme conditions
- Mechanical endurance up to 10 million cycles
- 3 sizes
- I_{th} up to 16 A
- Sealed up to IP67 (IP code, IEC60529)
- Temperature range up to -55° C ... +85° C
- Gold contacts, optional



WE CONTROL ELECTRIC ARCS RELIABLY



The quality of a contactor is best seen when switching off. Electric arcs are ignited between the contacts as they open – just like lightning bolts in a thundercloud. In order to extinguish these arcs we have developed a patented contactor concept by which the arc is driven into the arc chute and extinguished within a few milliseconds. Thus Schaltbau can offer real equipment safety. For the innovative contactor technology prevents the contacts from welding or burning and the equipment from being totally destroyed as a result of a component failure.

For more information visit
 www.schaltbau.info/contactors

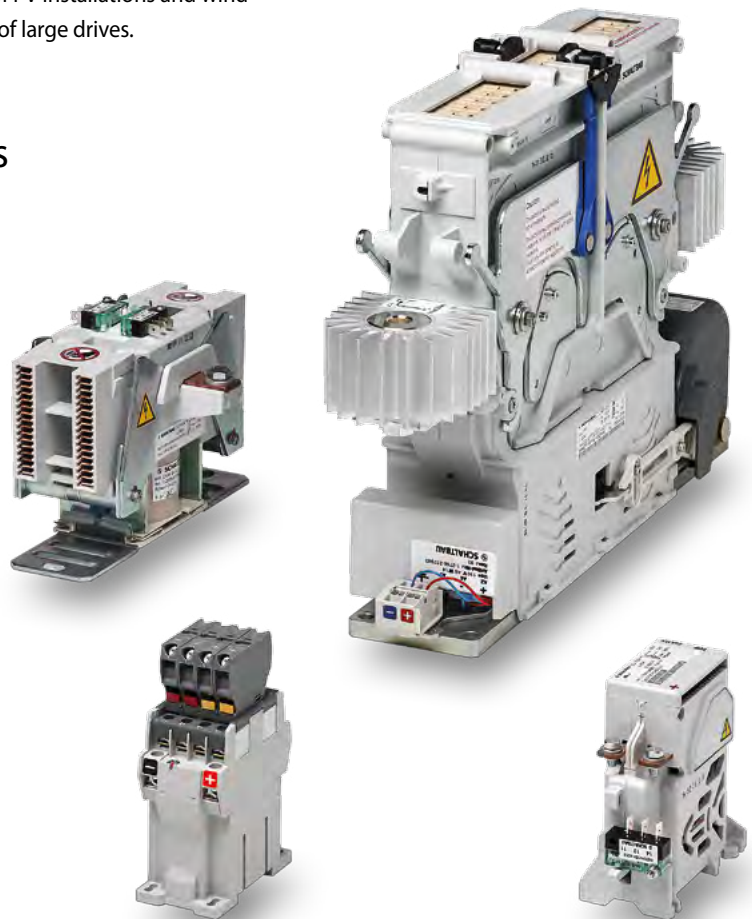
DC and AC contactors

Schaltbau contactors meet the special requirements of railway engineering, because they are equally suitable for AC and DC networks and capable of coping with widely varying supply voltages. You can find them mounted in the switchgear cabinets of traction and auxiliaries inverters, as used for controlling heating, ventilation and air conditioning of the compartments.

Typical industrial applications are stationary battery storage systems of PV installations and wind turbines as well as backup systems of base stations, but also inverters of large drives.

Contactors for various applications


- Battery contactors
- Cam contactors for DC and AC up to 1,000 V
- Universal contactors for DC and AC up to 1,500 V
- High-voltage contactors, 1 up to 3 pole, up to 3,000 V and 1,100 A
- Contactors for traction inverters, DC and AC, up to 3,000 V and 1,100 A
- Contactors for auxiliaries/HVAC
- Motor contactors, 1 and 3 pole, AC



WE HAVE EVERYTHING UNDER CONTROL

Modern transport systems demand reliable and high-quality components working in flawless unison like a rider and steed. Schaltbau's control and signalling devices work to ensure outstanding safety and short downtimes in rail vehicles around the globe. Their components deliver on the highest standards, working impeccably and ensuring efficient and smooth operations on a daily basis. As a result, both operators and manufacturers always enjoy a smooth ride and unwavering control despite the sometimes challenging nature of the rail industry.



For more information visit
 www.schaltbau.info/rail

Control devices

Schaltbau develops and manufactures complete driver cabs as well as various components and systems for applications in passenger coaches, locomotives, EMUs, DMUS, special vehicles and bus drive systems, that meet all requirements for quality, reliability, safety and service life. With our specific know-how and technical capacity, we are the ideal source of pioneering, economical concepts.


Equipment for drivers cab and passenger use

- Complete drivers cab equipment
- Interactive displays
- Master controllers and toggle switches
- Control panel assemblies and emergency brake handles
- Electronic buzzers



WE ENSURE SMOOTH OPERATION

Maintenance as needed and modernization of complete rail vehicles or their parts is crucial for the operation and service life. A flawless technical condition is an absolute must for the safe, punctual and economical operation of your rail vehicle. Downtimes can instantly cost you customers' trust and money: In addition to the loss in revenue and higher costs, they can also harm the company's image because nothing is more annoying or worrying for the passengers and transporters than delays or cancellations.

For more information visit
 www.schaltbau.info/service-en

Service

Thanks to our specialised knowledge for components and systems in the driver's compartment, Schaltbau has a complete competence for the consultation, planning and execution of technical maintenance, repairs and revisions.

In cooperation with you, we develop customised solutions that can be integrated into existing vehicles and operator concepts, with the clear objective to meet your requirement for technical availability and thereby ensure a smooth service.

For components and systems on rolling stock

- Maintenance
- Repair
- Revisions, Overhaul (MTBO)
- On-site service
- Individual maintenance contracts (Service Level Agreements)
- On-site training, product trainings



Safety and sustainability

Safety for man and machine

Schaltbau industrial products such as connectors and switchgear are particularly suited to meet the more stringent requirements of the new EU machinery directive or industrial safety and health protection. If you are looking for components for your safety-related applica-

tion, a look into our product line would be worthwhile. You can also learn a lot from our many realized applications for your particular application situation. Or benefit from our consulting expertise in order to find out how to implement optimal safety with maximum cost-effectiveness.

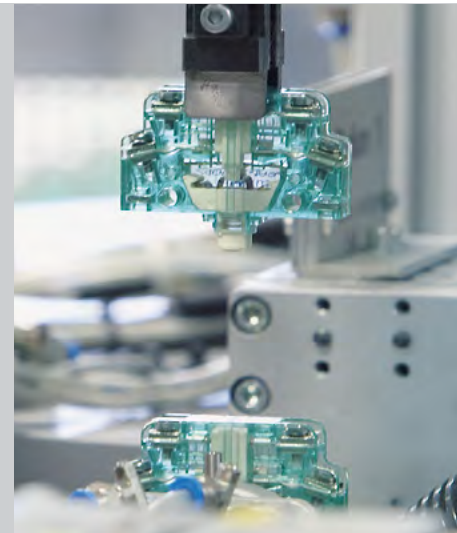
Certified safety

Safety and reliability are our greatest assets. We've been producing snap-action switches with positive opening operation for four decades and also offer the greatest variety. Every series is built, tested and certified according to VDE, UL and when necessary even CCC.



The future is sustainability

Sustainability and the „green spirit“ are our inspiration. As a globally operating company we have a particularly high responsibility for the sustainable development of products that meet the requirements of our customers and comply with the regulations for the protection of human health, safety and the environment. For us a sustainable development also includes both the responsible use of resources and the full exploitation of all possibilities to save energy.



Quality and the environment

Active, innovative, for the long run

The customer is the main focus of our thoughts and deeds. Comprehensive quality management is the guarantee of customer satisfaction and therefore safeguards the long-term success of Schaltbau GmbH. We are aware of our social responsibility for maintaining the natural environment and act accordingly.



Certified to
DIN EN ISO 9001 since
1994



Certified to
DIN EN ISO 14001 since
2002



Certified to
IRIS since 2008



Schaltbau GmbH is a
manufacturer to RoHS



www.schaltbau-gmbh.com



Schaltbau – Electrical Components and Systems for Railway Engineering and Industrial Applications

For detailed information on our products and services visit
www.schaltbau-gmbh.com – or give us a call!



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