

PRODUCT PORTFOLIO





WHO ARE WE

As one of the world market leaders, VAHLE develops high-quality power, data transmission and automation systems that are used in mobile industrial applications worldwide. Quality, dynamics, innovation and passion are the cornerstones of our company.

Founded in 1912 by the inventor of the first conductor rail, Paul Vahle, four generations have since developed the family business into a high-tech company. Then, as now, our mission was to provide intelligent process automation that support the needs of our customers. In our more than 100-year history, VAHLE has been able to transform many innovative ideas into products that have become established worldwide standards.

In Schwoich, Austria, we operate an innovation and development center with VAHLE Automation GmbH. With production sites at our headquarters in Kamen as well as in Dortmund, we exclusively supply high-quality products "made in Germany." We maintain service locations worldwide so that we can respond to customer inquiries quickly anywhere at any time.

Our portfolio includes products from the fields of power transmission (vPOWER), data communication (vCOM), positioning (vPOS) and control (vDRIVE). We also offer system solutions (vSYSTEMS), an intelligent combination of our portfolio.



WHERE ARE WE

Since 1912, the VAHLE Group has specialized in intelligent and solution-oriented energy and data transmission systems for mobile industrial applications in these key markets:

- **Intralogistics**
- **Automotive**
- **Port technology**
- **Crane technology**
- **People mover**
- **Amusement rides**

YOUR VISION – OUR SOLUTION



CUSTOMIZED SYSTEMS FOR INTRALOGISTICS APPLICATIONS

The growth of online retailing is having a direct and lasting impact on intralogistics. High customer expectations for fast, reliable and cost-effective e-commerce fulfillment can no longer be met with manual processes. In addition, there is less and less installation space available for materials handling technology.

Automation on factory floors also holds the potential to make material flows more efficient, connect people and machines, and speed up the production process. These challenges require powerful cutting-edge technology and special expertise.

The VAHLE Group develops smart solutions that meet the requirements of digital transformation. In doing so, we rely on an intelligent combination of electrification, data communication, and positioning and control systems to optimize intralogistics processes in industrial manufacturing and shipping centers.



INDIVIDUAL COMPONENTS FOR CRANE TECHNOLOGY

In almost all manufacturing and assembly applications, things are moved, lifted and lowered. Appropriate lifting devices depend on the different properties of the goods to be transported. The range of crane applications is wide, but they all have horizontal and vertical motion sequences in common. The goal is always to reliably transport heavy loads to their destination.

VAHLE has been serving customers from diverse industries for years. Based on the exact needs of our customers, we supply suitable system solutions for crane technology. In addition to standard products, we also supply custom-made products to make every crane an efficient tool. However, we do not only offer technical solutions, but also support our customers in the conceptual design and construction of cranes. We also offer numerous after-sales services.



SOLUTIONS FOR FLEXIBILITY IN THE AUTOMOTIVE INDUSTRY

Modern production facilities are characterized by adaptability, resource efficiency, ergonomic design and the integration of customers and business partners into the value creation processes. The production sequence is focused on maximum flexibility, so the requirements for energy and data transmission solutions are correspondingly high.

As a pioneer in this field, VAHLE's innovative system solutions combine energy and data transmission, positioning and control systems. Our efficient solutions are designed to improve the flow of goods and materials, reduce unplanned downtime, optimize workflows and reduce production costs.



REVOLUTIONARY SOLUTIONS FOR MODERN PORTS

As energy costs continue to rise, and environmental protection and the reduction of CO₂ emissions are increasingly important, many operators are focusing on the conversion of standard ports into “Green Ports.” Modern port operations are characterized by high productivity rates and permanent plant availability due to optimally coordinated work processes. Accordingly, automation and the conversion of old facilities into “Green Ports” are advancing by leaps and bounds. “Green Ports” offer unique cost-saving benefits through time savings and efficiency, offering a unique competitive edge in the market.

VAHLE provides innovative system solutions that meet the requirements of electrified ports. In addition to technical solutions, our customers also receive support from us in the conceptual design and construction of their port technology. We also offer after-sales services such as product training, routine maintenance or inspections.





INNOVATIVE SYSTEMS FOR PEOPLE MOVERS

Reducing congestion, accidents and emissions are three key goals of transportation planning. They can be achieved through the use of people movers: fully automated vehicles that transport people without pollutants or the stop-and-go typical of cars and buses. Accidents caused by human error are also greatly reduced. People movers are not only used in enclosed areas such as airports, but form the basis of complex transportation systems.

VAHLE has been supplying solutions to manufacturers of people movers for decades and operates its own development site. This gives us the expertise and innovative strength to offer future-proof system solutions for people mover vehicles.



POWERFUL SOLUTIONS FOR AMUSEMENT RIDES

Higher, faster, more spectacular! Whether stationary rides or flying structures – the dimensions of today's amusement and theme parks were unimaginable until a few years ago. To provide trouble-free and safe rides, reliable power, positioning and data transmission systems are required. On the technical side, the rising expectations of visitors bring particularly complex challenges.

VAHLE has many years of experience in the field of amusement rides and has various proven systems in its range. Our compact and touch-proof products are coordinated and provide repeatable conditions for roller coasters, Ferris wheels, dark rides or freefall towers.

vPOWER CONDUCTOR SYSTEMS

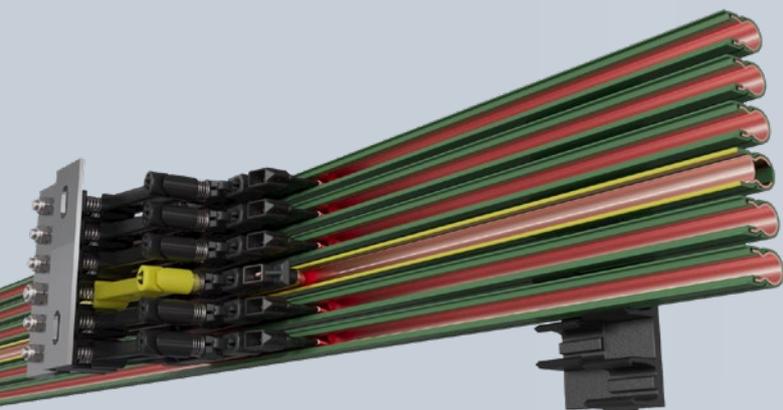
OPEN CONDUCTOR SYSTEM

up to 2,360 amps
up to 250 m/min
-40 °C to +200 °C

- ✓ High flexibility due to different conductor materials
- ✓ Robust design for particularly adverse environments
- ✓ Durable and low-maintenance system
- ✓ Customizable for individual requirements

APPLICATIONS

Heavy-duty cranes, Standard cranes,
Gantry cranes, Trams, Ferris wheels



INSULATED CONDUCTOR SYSTEM U10

up to 100 amps
up to 400 m/min
-30 °C to +85 °C

- ✓ Durable and low maintenance
- ✓ Especially suitable for EMS systems
- ✓ Easy adjustment during installation
- ✓ Suitable for lateral and suspended arrangement
- ✓ Protective conductor prevents unintentional polarity reversal

APPLICATIONS

Electric monorail systems, Electric pallet
systems, Skillet lines, Shuttle, Rides, Sorter,
Studio technology

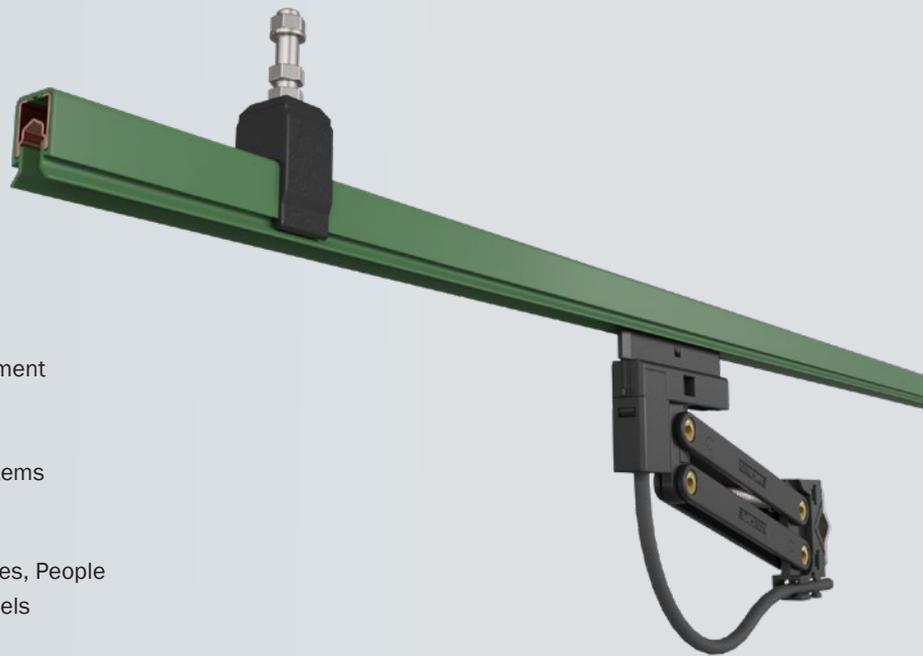
INSULATED CONDUCTOR SYSTEM U15 | U25 | U35

up to 1250 amps
up to 600 m/min
-30 °C to +130 °C

- ✓ Universal for hanging, side and vertical arrangement
- ✓ High safety due to IP23 contact protection
- ✓ Heatable to prevent icing up
- ✓ Can be combined with data and positioning systems

APPLICATIONS

Standard cranes, Process cranes, Heavy-duty cranes, People mover, Rides, STS cranes, eRTG cranes, Ferris wheels



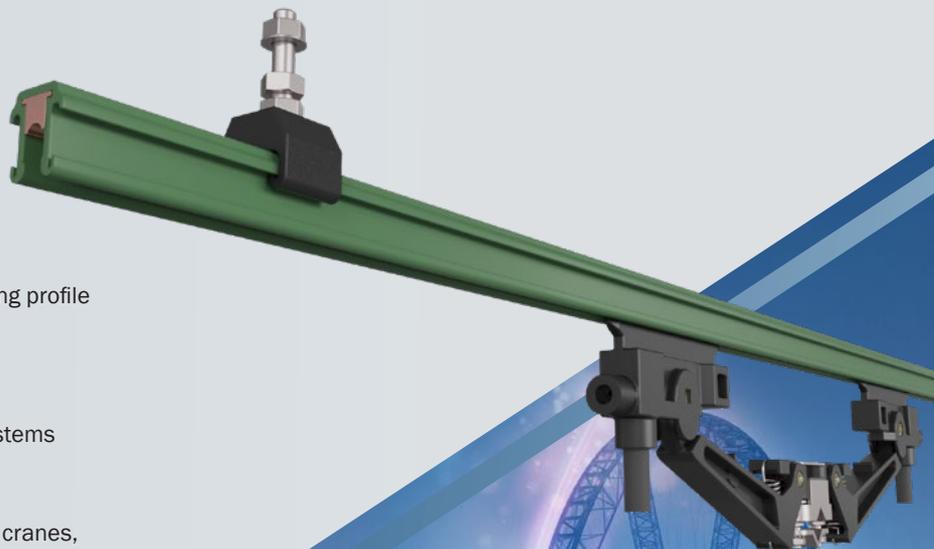
INSULATED CONDUCTOR SYSTEM U20 | U30

up to 530 amps
up to 600 m/min
-30 °C to +85 °C

- ✓ Durability due to solid copper continuous casting profile
- ✓ Resistant even to high frequency installations
- ✓ Acid and alkali resistant
- ✓ High safety due to IP23 contact protection
- ✓ Can be combined with data and positioning systems

APPLICATIONS

Rides, Ferris wheels, Dark rides, Sorter, Standard cranes, Process cranes, Galvanizers



vPOWER

ENCLOSED CONDUCTOR SYSTEMS

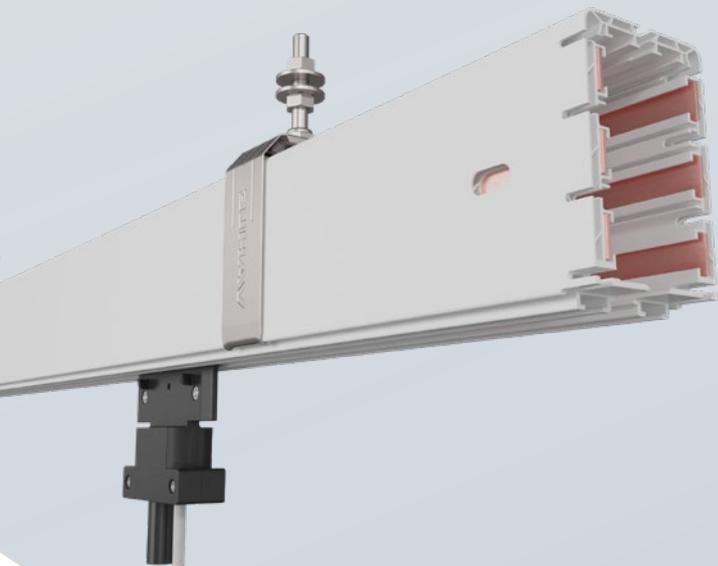
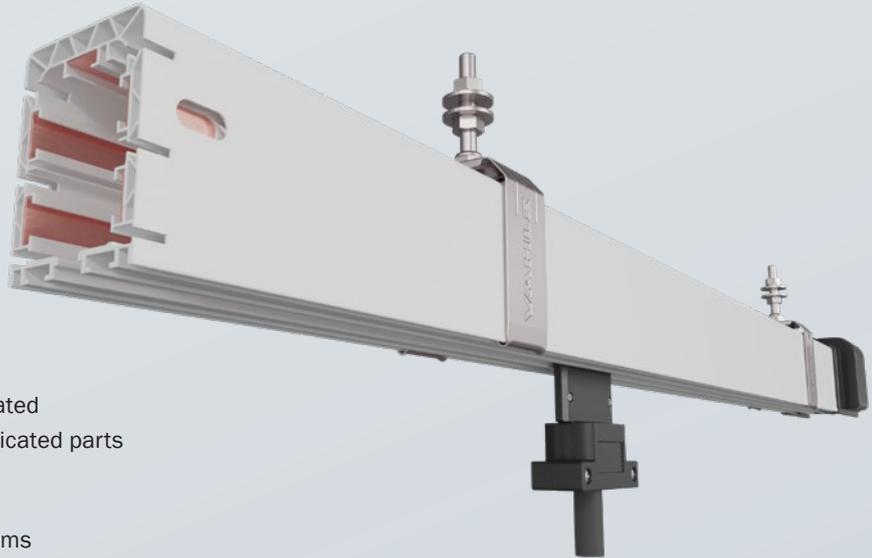
ENCLOSED CONDUCTOR SYSTEM KBH

up to 200 amps
max. 5 poles
up to 250 m/min
-30 °C to +60 °C

- ✓ Robust and inexpensive system
- ✓ Very compact dimensions
- ✓ IP23 contact protected (with sealing lip IP24)
- ✓ APOS Magnetic positioning system can be fully integrated
- ✓ Short delivery times and fast assembly due to prefabricated parts

APPLICATIONS

Standard cranes, Process cranes, Bucket conveyor systems



ENCLOSED CONDUCTOR SYSTEM MKH

up to 200 amps
max. 10 poles
up to 250 m/min
-30 °C to +60 °C

- ✓ Combination of power and signal transmission
- ✓ Very compact dimensions even with high number of poles
- ✓ IP23 contact protected (with sealing lip IP24)
- ✓ Fast assembly thanks to prefabricated parts and clip technology
- ✓ APOS Magnetic positioning system can be fully integrated

APPLICATIONS

Process cranes, Bucket conveyor systems, Studio technology,
Lighting technology, Transfer cars



ENCLOSED CONDUCTOR SYSTEM LSV | LSVG

up to 300 amps

max. 11 poles

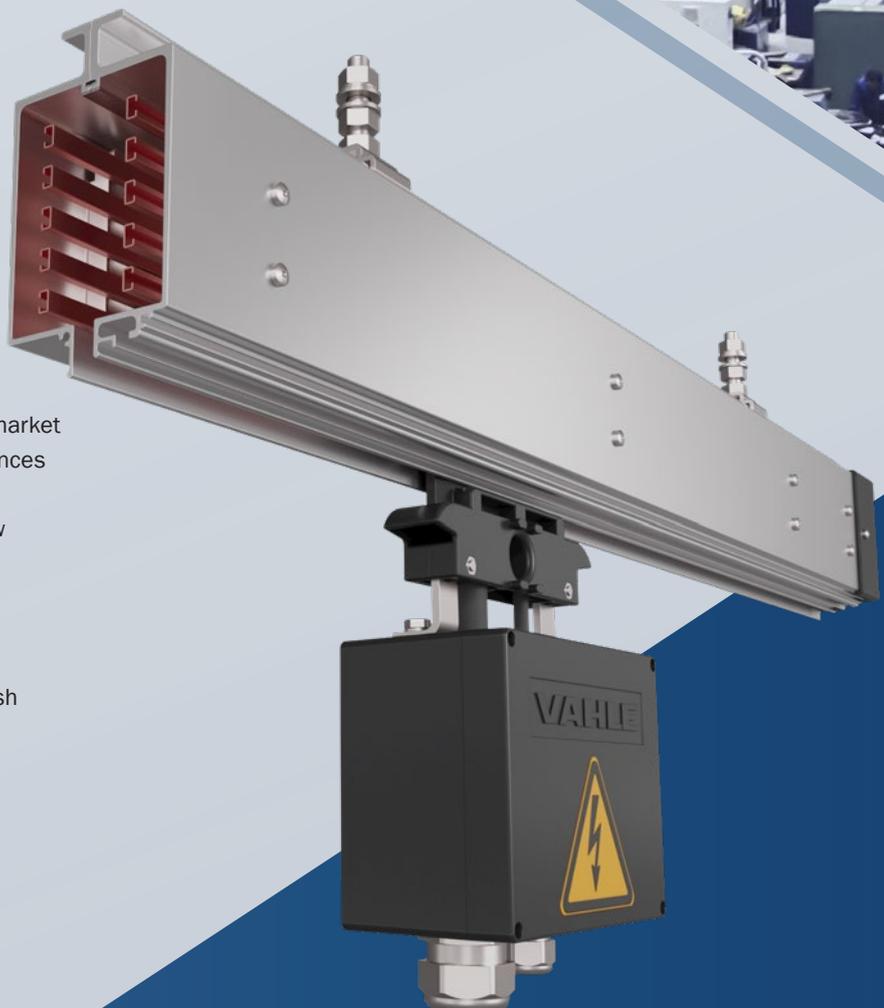
up to 300 m/min

-40 °C to +120 °C

- ✓ Combination of power and signal transmission
- ✓ Most robust enclosed conductor system on the market
- ✓ High reserves for clearances and creepage distances
- ✓ IP23 contact protected (with sealing lip IP24)
- ✓ Quick and easy installation due to plug and screw connections

APPLICATIONS

Standard cranes, Process cranes, Bucket conveyor systems, Stadium roofs, Special applications in harsh environments



vPOWER

COMPACT CONDUCTOR SYSTEMS

COMPACT CONDUCTOR SYSTEM

VKS10

up to 140 amps

max. 10 poles

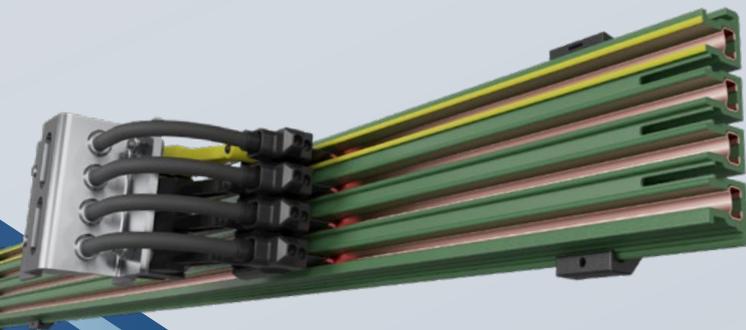
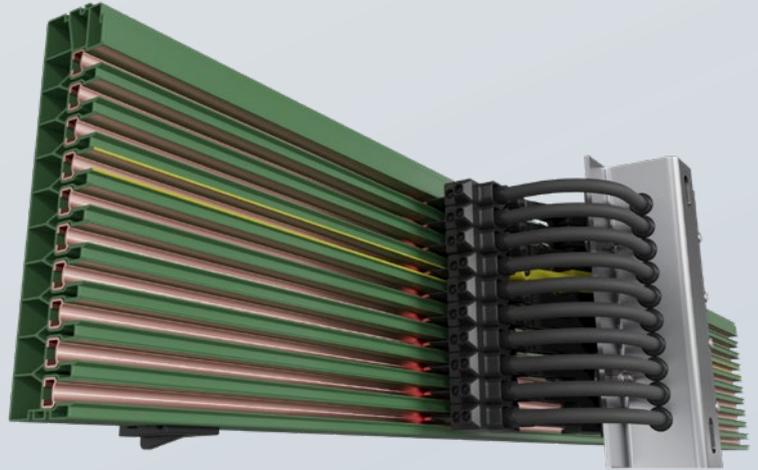
up to 450 m/min

-30 °C to +55 °C

- ✓ High compatibility with common rack profiles and positioning systems
- ✓ Compact design
- ✓ Simple and fast mounting due to clips technology and plug-in connections
- ✓ Protected against accidental contact (IP 2X) and UL approval
- ✓ Suitable for refrigerated and deep-freeze warehouses

APPLICATIONS

Automated storage and retrieval systems, Transverse transfer car, Transfer cars, Automatic small parts warehouse, Deep-freeze warehouses



COMPACT CONDUCTOR SYSTEM

VKS

up to 140 amps

max. 6 poles

up to 450 m/min

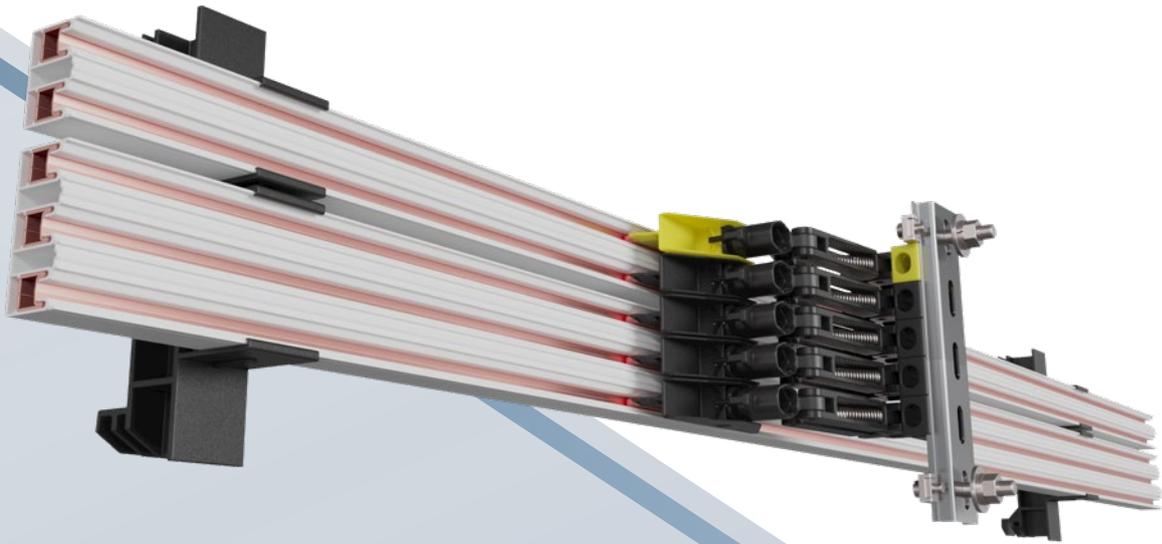
-30 °C to +55 °C

- ✓ Minimal space requirements due to ultra-flat design
- ✓ Simple, safe and fast installation even in curved tracks
- ✓ Contact protection (IP 2X) and UL approval
- ✓ Universal for hanging, lateral and vertical arrangement
- ✓ Suitable for refrigerated and deep-freeze warehouses

APPLICATIONS

Automated storage and retrieval systems, Automatic small parts warehouse, Skillet lines, Transverse transfer car, Shuttle, Transfer cars, Deep-freeze warehouses





COMPACT CONDUCTOR SYSTEM VCL

up to 100 amps

max. 6 poles

up to 300 m/min

-30 °C to +55 °C

- ✓ Modular system for universal solutions
- ✓ Simple, safe and fast installation due to clips technology
- ✓ Concealed implementation in drive profiles due to ultra-compact dimensions
- ✓ Wide power range from 40 to 100 amps and 12 to 500 volts

APPLICATIONS

Shuttle, Automatic small parts warehouse,
Automated storage and retrieval systems,
Transfer cars



vPOWER FESTOON SYSTEMS

SMALL FESTOON SYSTEMS

Running rail: S1 | S2 | S3 | K1 | V3
up to 55 kg load per wagon
up to 120 m/min
-30 °C to +100 °C

- ✓ Perfect for light and medium duty applications
- ✓ Easy connection to on-site technology
- ✓ Suitable for indoor and outdoor installations
- ✓ Curved tracks possible
- ✓ Accommodates flat as well as round cables

APPLICATIONS

Standard cranes, Process cranes,
Bucket conveyor systems,
Studio technology



LARGE FESTOON SYSTEMS

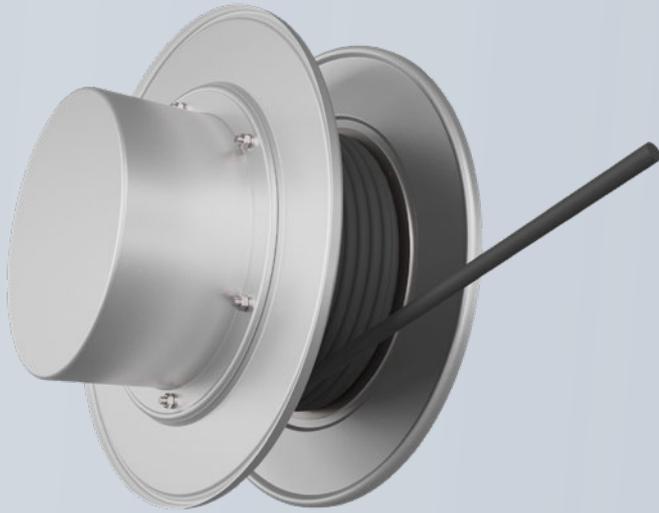
Running rail: INP | IPE
up to 500 kg load per wagon
up to 240 m/min
-30 °C to +100 °C

- ✓ Pre-assembled for plug and play installation
- ✓ Suitable for indoor and outdoor installations
- ✓ Withstands harsh environments (waste, steel and coal industries, grain handling, ports)
- ✓ Accommodates flat as well as round cables, shielded cables also possible

APPLICATIONS

Heavy-duty cranes, Gantry cranes, Standard cranes, STS cranes, eRTG cranes, RMG cranes

vPOWER CABLE REELS



SPRING OPERATED CABLE REELS

up to 60 m/min
up to 60 m travel path
-20 °C to +40 °C

- ✓ Travel speeds up to 60 m/min
- ✓ Up to 120,000 spring cycles possible
- ✓ IP55 protected, higher classes available on request
- ✓ Use in harsh environments possible

APPLICATIONS

Standard cranes, Process cranes, Facade accesses,
Stadium roofs, Studio technology

MOTOR POWERED CABLE REELS

up to 200 m/min
up to 1.000 m travel path
-20 °C to +40 °C

- ✓ Suitable for highly dynamic applications
- ✓ Maximum corrosion protection of the drum bodies due to hot-dip galvanized elements
- ✓ IP55 protected, higher classes available on request
- ✓ Resistant to aggressive environmental influences
- ✓ VDE and UVV compliant

APPLICATIONS

Heavy-duty cranes, Gantry cranes,
STS cranes, RMG cranes



vPOWER

CHARGING CONTACTS

CHARGING CONTACTS

up to 600 amps

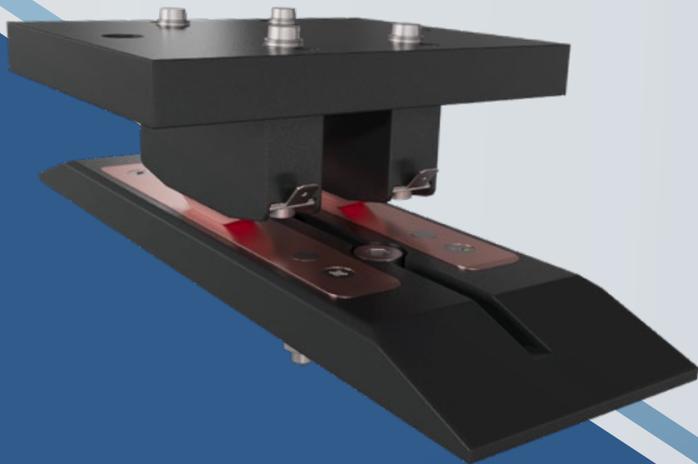
up to 1 m/s up or down speed

-30 °C to +55 °C

- ✓ Broad standard portfolio and customized solutions
- ✓ Particular robustness due to the use of high-quality materials
- ✓ Large tolerances possible due to linear guide elements
- ✓ Optionally available with pilot contacts

APPLICATIONS

Automated guided vehicles, E-Forklifts, Parking garages, Rides, Shuttle



SHUTTLE CHARGING SYSTEM

up to 140 A

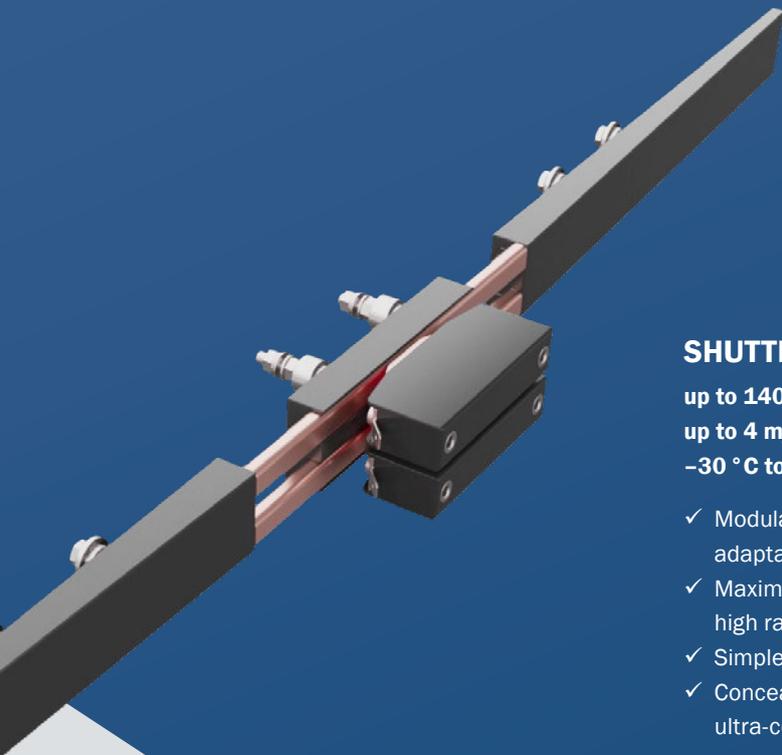
up to 4 m/s up or down speed

-30 °C to +55 °C

- ✓ Modular construction system enables individual adaptation and free scalability
- ✓ Maximum efficiency due to short charging cycles and high ramp-up speeds
- ✓ Simple installation (plug and play)
- ✓ Concealed implementation in drive profiles due to ultra-compact dimensions

APPLICATIONS

Shuttle with onboard energy storage



vPOWER

CONTACTLESS POWER SUPPLY

CPS 140 KHZ

up to 30 kW per line

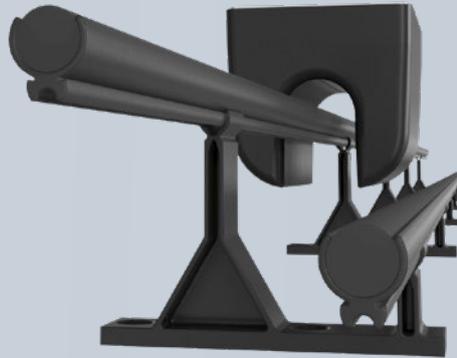
unlimited speed

0 °C to +40 °C

- ✓ Low-maintenance and wear-free system
- ✓ IP54 or better protected pickups
- ✓ High power density with low power loss
- ✓ Individual plant layouts with switches and shifting elements
- ✓ Wide power range from 10 to 560 volt and 70 W to 30 kW

APPLICATIONS

Sorter, Electric monorail systems, E-Forklifts, Electric pallet systems, Rides, Automated guided vehicles, Dark rides



CPS 20 KHZ

up to 90 kW per line

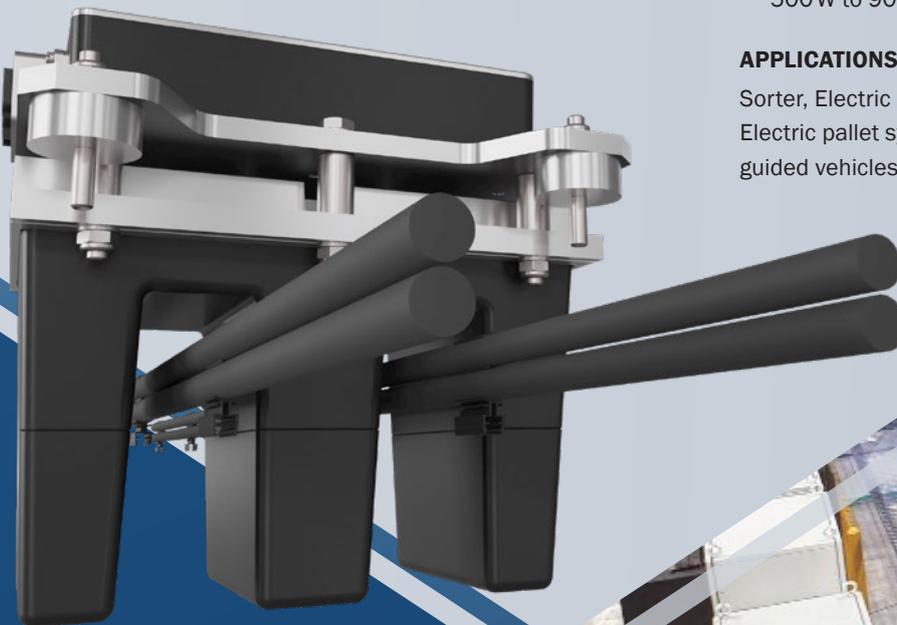
unlimited speed

0 °C to +40 °C

- ✓ Low maintenance and wear-free system
- ✓ IP54 or better protected pickups
- ✓ Protection functions against short circuit, overtemperature or undervoltage
- ✓ Wide power range from 24 to 560 volt and 500 W to 90 kW

APPLICATIONS

Sorter, Electric monorail systems, E-Forklifts, Electric pallet systems, Rides, Automated guided vehicles, Dark rides



vPOS POSITIONING

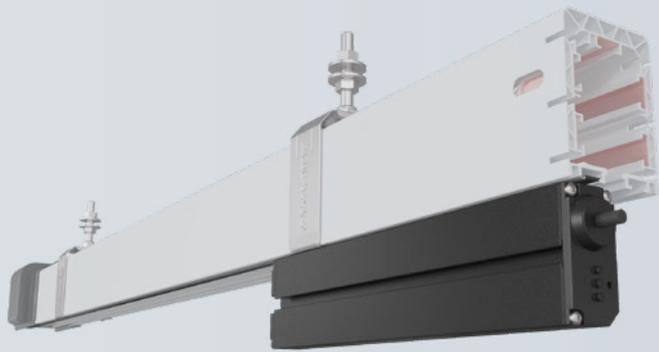
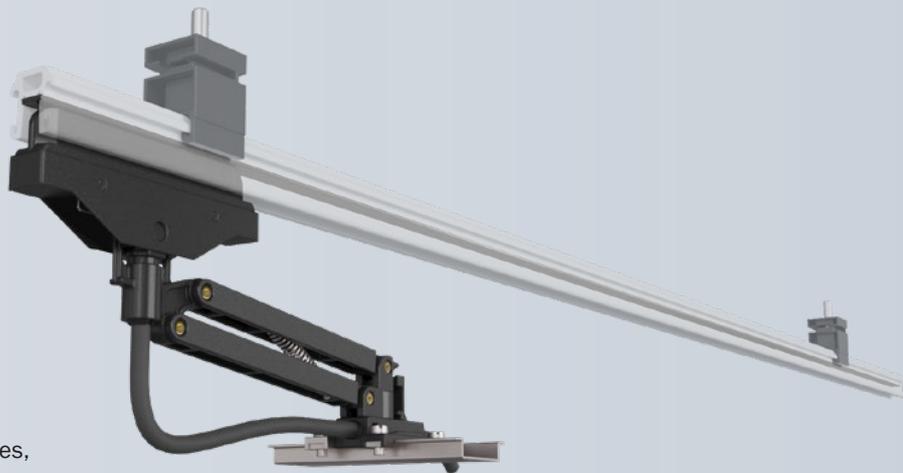
APOS MAGNETIC GLIDING

up to 180 m/min
up to 524 m system length
0 °C to +55 °C

- ✓ Absolute position value
- ✓ Resolution accuracy of 1 mm
- ✓ Robust magnetic method
- ✓ High repeatability
- ✓ Can also be used in adverse environments

APPLICATIONS

Electric monorail systems, Electric pallet systems, Cranes, Rides, Dark rides, Skillet lines



APOS MAGNETIC TOUCHLESS

up to 180 m/min
up to 262 m system length
-20 °C to +60 °C

- ✓ Absolute position value
- ✓ Resolution accuracy of 1 mm
- ✓ Robust magnetic method
- ✓ Non-contact scanning of the code tape
- ✓ Easy integration and commissioning

APPLICATIONS

Standard cranes, Process cranes, Gantry cranes, Bucket conveyor systems





APOS OPTIC

up to 180 m/min

up to 10.000 m plant lengths

0 °C to +60 °C

- ✓ Absolute position value
- ✓ Contactless process
- ✓ Extensive diagnostic kit
- ✓ Low susceptibility to errors due to DataMatrix code
- ✓ High compatibility with various conductor systems and control systems

APPLICATIONS

Electric monorail systems, Electric pallet systems,
Skillet lines



vCOM

DATA COMMUNICATION



SMGM

up to 100 MBit/s

up to 180 m/min

0 °C to +50 °C

- ✓ Secure and reliable data communication
- ✓ Very compact design
- ✓ Can be integrated into all common EMS profiles
- ✓ Easy installation and commissioning (plug and play)
- ✓ Coexistence with existing free radio systems
- ✓ Compatible with PROFINET and PROFI-safe

APPLICATIONS

Electric monorail systems, Electric pallet systems, Skillet lines, Cranes





SMGX

up to 100 MBit/s

up to 300 m/min

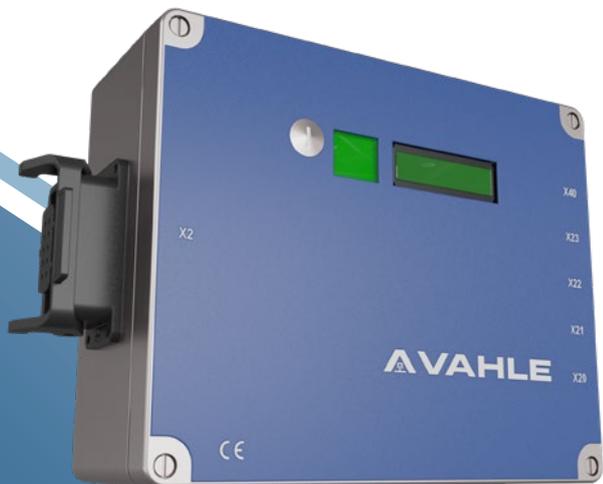
-20 °C to +70 °C

- ✓ Secure and reliable data communication
- ✓ Simple installation and commissioning (plug and play)
- ✓ Coexistence with existing free radio systems
- ✓ Indoor and outdoor use
- ✓ Compatible with PROFINET and PROFI-safe
- ✓ Optionally expandable with heating system

APPLICATIONS

eRTG cranes, STS cranes, Stadium roofs,
Facade accesses, Cranes

vDRIVE CONTROL SYSTEMS



VCS1

Control system up to 1,5 kW

Half-wave communication, busbar or slotted waveguide

0 °C to +40 °C

- ✓ Compact design
- ✓ Integrated display for status indication
- ✓ Control via Siemens PLC function block
- ✓ Data connector for fast device replacement in case of service
- ✓ Provision of digital inputs and outputs and encoder interface
- ✓ Matched system components as separation and curve block controls

APPLICATIONS

Electric monorail systems, Electric pallet systems, Skillet lines

VCSX

Modular controls up to 7,5 kW

Slotted waveguide

0 °C to +40 °C

- ✓ Modular construction system
- ✓ Integrated display for status indication
- ✓ Control via Siemens PLC function block
- ✓ Standard versions for shorter delivery times
- ✓ Integrated safety functions for safe shutdown
- ✓ Provision of digital inputs and outputs and encoder interface

APPLICATIONS

Electric monorail systems, Electric pallet systems, Skillet lines





VCS-SMG-SAFE

Safe application control

PROFINET/PROFIsafe via slotted waveguide

0 °C to +50 °C

- ✓ TÜV certified
- ✓ Configuration via function block
- ✓ Tailor-made to VCSX control system
- ✓ Prepared technology applications integrated
- ✓ Easy device replacement due to integrated memory card
- ✓ Transparent communication based on established SMGM technology
- ✓ Supported safety functions: STO, SLS, SPOS

APPLICATIONS

Electric monorail systems, Electric pallet systems,
Skillet lines



vSYSTEMS SYSTEM SOLUTIONS

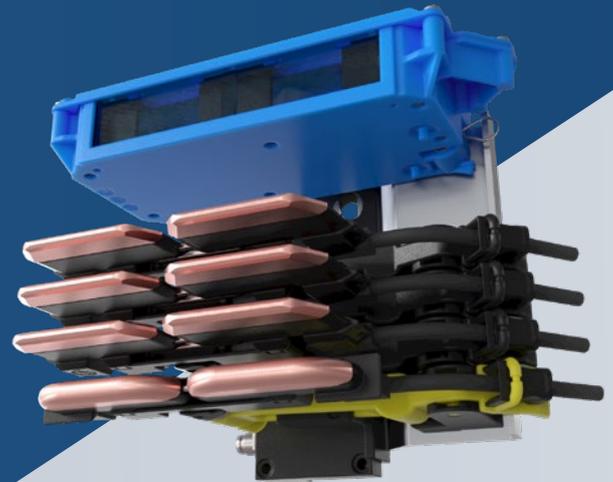
SMART COLLECTOR – PREDICTIVE MAINTENANCE

maximum travel speed identical to rail system
-30 °C to +55 °C

- ✓ Detects lifting and deflection movements of the current collector arms
- ✓ Positionally accurate determination of anomalies
- ✓ Quick and easy implementation without structural changes
- ✓ No intervention in the existing IT infrastructure
- ✓ Suitable for all systems with 14 mm phase distance (other systems on request)

APPLICATIONS

Electric monorail systems, Automated storage and retrieval systems, Electric pallet systems, Skillet lines



CURRENT COLLECTOR WITH SENSORS

- 3D sensors record the movement data of the pantograph during operation
- Function of the current collector is not influenced
- All common positioning systems integrable



MAIN UNIT

- Measurement data is processed and evaluated in real time
- Variable interfaces
- Compatible with various positioning and data transmission systems

DATA TRANSMISSION

- Detects reproducible anomalies and transmits to a certified data center
- No permanent transmission or storage
- Other data transfer options (SMGM, WLAN, etc.)



SOFTWARE

- Visualizes analyzed measurement data
- Enables to perform ongoing condition monitoring as well as various service options
- Can be accessed digitally using any terminal device

EMS SYSTEM

up to 100 amps

up to 180 m/min

- ✓ All components from a single source
- ✓ Specially tailored for EMS systems
- ✓ No additional superstructures on the EMS profile
- ✓ Simple and fast assembly
- ✓ High level of safety in accordance with required protection guidelines
- ✓ Flexible adaptation possible during installation

APPLICATIONS

Electric monorail systems



ERTG-SYSTEM

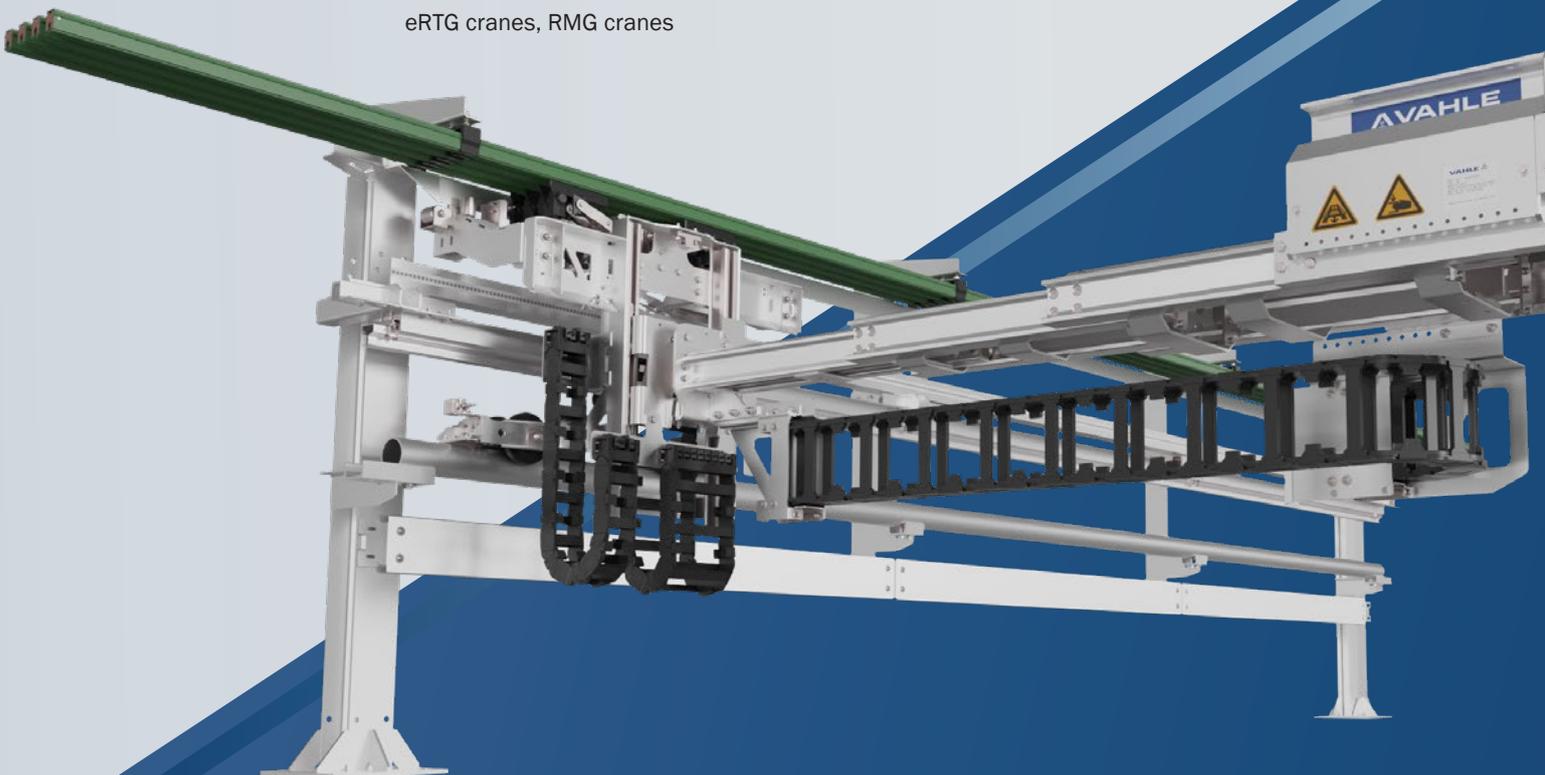
up to 1.000 amps

-20 °C to +50 °C

- ✓ Easy installation and commissioning (plug and play)
- ✓ Can be combined with data and positioning systems
- ✓ Compatible with PROFINET and PROFIsafe
- ✓ Low wear and low maintenance
- ✓ Automatic control
- ✓ Automatic connection to the power supply

APPLICATIONS

eRTG cranes, RMG cranes



SERVICE & SUPPORT

VAHLE offers a wide range of services and support, including installation and commissioning, maintenance and repair, spare parts management and training. We are also available to serve as a general contractor for your project, if required.

PROJECT MANAGEMENT

- Wide range of Pre- and After-Sales services
- Function as a system supplier or leading the project management as general contractor
- Organization of the required sub-projects including budgeting and full cost control
- Proactive communication on progress, schedule and realization timeframe
- Certified controlling of the entire project in accordance with ISO 45001

MAINTENANCE AND REPAIR

- One-time or periodic maintenance contracts
- Global repair management of electronic products
- Material thickness measurement of copper conductors of busbars and conductor rails
- Camera passes for testing encapsulated conductor rails
- Level measurement for slotted waveguides
- Cleaning of conductor rail systems
- Installation of software updates within the scope of release management

TRAININGS

- Qualification of external persons for maintenance and repair work on all product groups
- Basic training, which includes theoretical study and a practical test
- Advanced training, which includes an examination to become a foreman and supervised hands-on experience
- Application training, which includes advanced skills for self-maintenance

INSTALLATION AND COMMISSIONING

- Installation of all VAHLE components on new systems and retrofit systems
- Large service team including external partners
- Electrical connection according to DGUV regulation
- Overall responsibility for installation and commissioning possible
- Handover of the operational plant
- Qualified staff for start-up assistance available





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