VAHLE

CPS®
Contactless Power Supply

SYSTEMS IN MOTION

Contactless power supply for your applications

AGV – automated guided vehicles

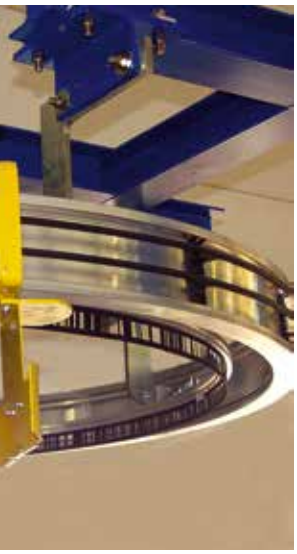
Skillet conveyors

Transfer cars

EMS – electrified monorail systems

Sortation technology

Clean-room technology



CONTENT

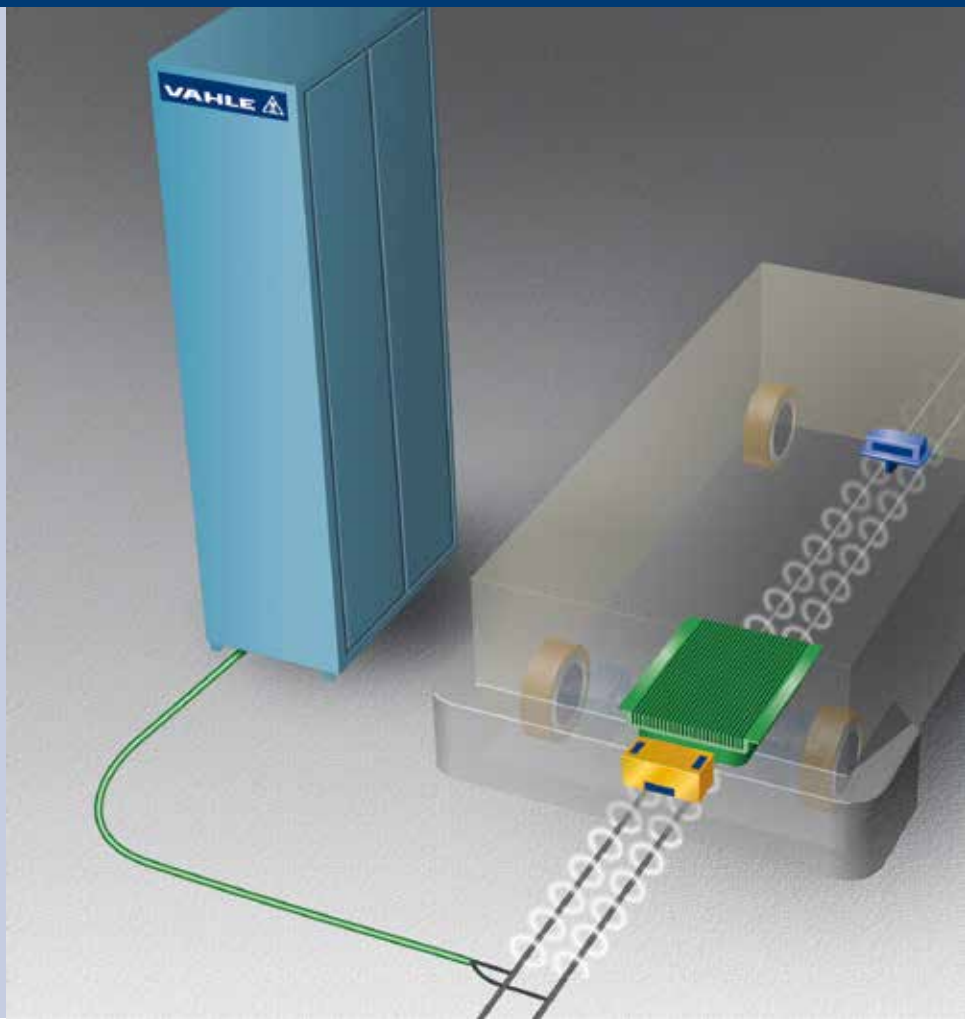
VAHLE CPS® – Systems in motion

The abbreviation **"CPS®"** stands for "Contactless Power Supply." This system supplies power to mobile electrical consumers without any physical contact. The power is inductively transmitted from a stationary (primary) conductor to a mobile consumer. A unique feature of CPS® is that data can also be transmitted via this primary conductor.

VAHLE CPS® has been continuously developed since 1997 and is now used in more than 450 operational plants in a wide range of industries.

Benefit from
– A large variety of possibilities
– Our technical expertise
– Our unique technology

OPERATING PRINCIPLE



Innovative development

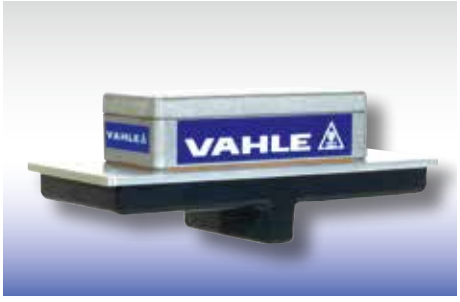
During the development of the CPS® technology, a strong focus was put on important criteria such as efficiently covering a wide range of performance, multiple areas of application and also the greatest possible level of environmental compatibility.

The required track current of 70 A (35 A only with special applications) results in an exceptionally high degree of efficiency as well as excellent electromagnetic compatibility (EMC / EMF).

In addition to the basic current supply, features such as inductive data transmission and inductive track guidance may be integrated to meet a wide spectrum of material handling requirements.

Power supply

Data transmission



General
CPS® operating principle

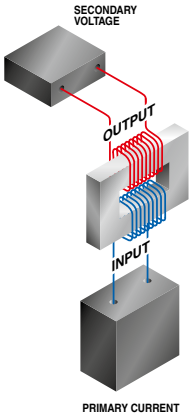
Transformer principle

VAHLE-CPS® technology provides electrical energy without any mechanical contact. It utilizes the induction principle similar to a transformer‘s primary/secondary transfer. In a transformer, the primary and secondary windings are on a common, closed ferromagnetic core. CPS® technology, on the other hand, ‘‘stretches’’ the primary winding to a long loop and places the secondary winding onto an open ferromagnetic core. This allows relative motion of the two windings. The transmission characteristics are optimized by using a high transmission frequency of 20 kHz.

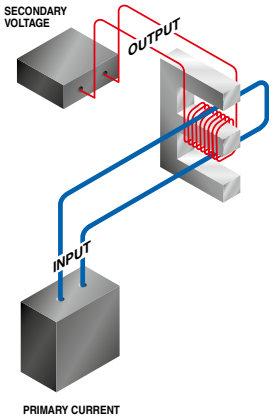
- **Maintenance-free**
- **Maximum utilization**
- **Wide power range**
- **Best EMC/EMF behavior**
- **High degree of efficiency**
- **Integrated data transmission**
- **Integrated track guidance**

CPS® technology

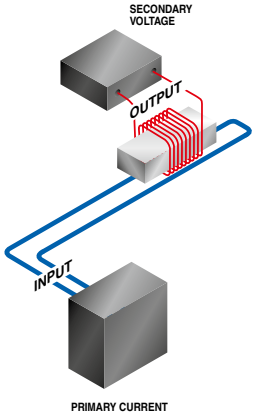
Conventional transformer



E-shaped pick-up



Flat pick-up



Track guidance

High frequency

The CPS® primary inverter converts the customer‘s existing three phase alternating current into single phase alternating current with a frequency of 20 kHz. The primary cable is charged with constant current by using an interface circuit. The voltage induced in the pick-up coil is rectified and adapted to consumer requirements.

AGV – AUTOMATED GUIDED VEHICLES

Flat pick-up systems for automated guided vehicles

The pick-up facilitates the inductive transmission of the energy provided by the primary conductor. There are different types of pick-ups available, depending on the area of application.

Flat pick-up PS 18

Capacity	1.3 kW at 60% ED
(nom./peak)	2 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH)	765 x 360 x 80
Protection class	IP54
Weight	26.3 kg

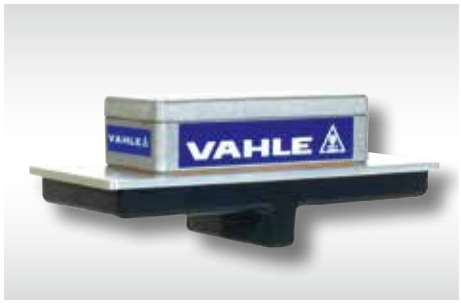
Flat pick-up PS 08

Capacity	350 W/500 W with heat sink
(nom./peak)	170 W without heat sink
Output voltage	24 VDC
Dimensions (LxWxH)	310 x 210 x 98
Protection class	IP54
Weight	7.3 kg

Flat pick-up PS 19

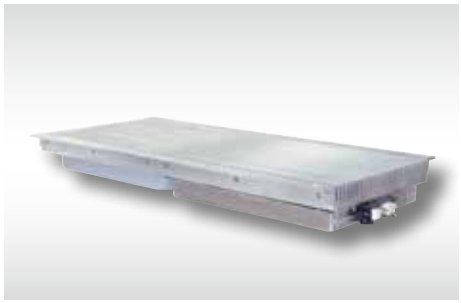
Capacity	2 kW at 60% ED
(nom./peak)	3 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH)	895 x 360 x 80
Protection class	IP54
Weight	31.5 kg

Data transmission



- Data transmission via primary conductor (see page 25)

- Pick-up system with integrated power electronics
- Optionally with 24-27 VDC output for battery charging
- Parallel connection of several pick-up systems possible



- Pick-up system with integrated power electronics
- Additional 24 VDC output as auxiliary voltage
- Parallel connection of several pick-up systems possible

Advantages for automated guided vehicles

- Track path does not create obstructions
- Complex track layouts possible
- System can easily be expanded
- Battery or UltraCap charging during travel
- Maintenance-free
- Maximum utilization
- Insensitive to dirt
- Trouble-free functionality even in damp conditions
- Data transmission and track guidance via primary cable

AGV

Typically, AGVs rely upon batteries or underground conductor bar systems for power supply. Today, contactless power supply systems are being utilized with clear benefits. When used with the contactless track guidance system, users can benefit from completely clear and obstruction free floor surfaces. This allows cross track to pass without issue and increase plant productivity.

Additionally, these components are unaffected by dirt, oils and other debris typically found in industrial applications reducing down times and increasing efficiencies.

Thanks to a vast variety of pick-up units, inductive supply to AGVs of any size is possible.

Flat pick-up PS 18 compact

Capacity	1.3 kW at 60% ED
(nom./peak)	2 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH)	395 x 360 x 185
Protection class	IP54
Weight	27.3 kg

Flat pick-up PS 19 compact

Capacity	2 kW at 60% ED
(nom./peak)	3 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH)	455 x 360 x 185
Protection class	IP54
Weight	32.5 kg

- Pick-up system with integrated power electronics
- Additional 24 VDC output as auxiliary voltage
- Parallel connection of several pick-up systems possible

Flat pick-up PU 18/PU 18 compact

Capacity	1.3 kW at 60% ED
(nom./peak)	2 kW max. 3 min.
Dimensions (LxWxH)	
PU 18	620 x 360 x 80
PU 18 compact	370 x 360 x 185
Protection class	IP54
Weight	22 kg

Flat pick-up PU 19/PU 19 compact

Capacity	2 kW at 60% ED
(nom./peak)	3 kW max. 3 min.
Dimensions (LxWxH)	
PU 19	705 x 360 x 80
PU 19 compact	455 x 360 x 185
Protection class	IP54
Weight	24 kg

- Pick-up unit only in connection with a separate voltage regulation (see page 26)
- Parallel connection of several pick-up units to one voltage regulatior possible

Track guidance

- Inductive track guidance via primary conductor (see page 26)

SKILLET CONVEYOR

Flat pick-up systems for skillet conveyors

The pick-up facilitates the inductive transmission of the energy provided by the primary cable. There are different types of pick-ups available, depending on the area of application.

U-shaped pick-up systems for skillet conveyors

The U-shaped design of the pick-up coil surrounds the primary cable resulting in a highly efficient electromagnetic coupling. Thus even relatively small pick-up units provide superior performance.

Flat pick-up PS 18

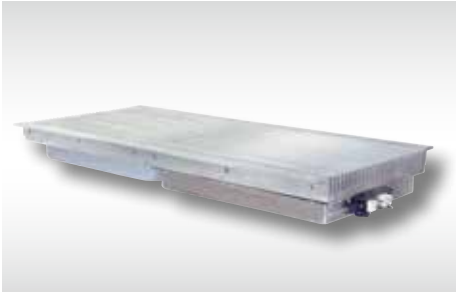
Capacity	1.3 kW at 60% ED
(nom./peak)	2 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH)	765 x 360 x 80
Protection class	IP54
Weight	26.3 kg

Flat pick-up PS 19

Capacity	2 kW at 60% ED
(nom./peak)	3 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH)	895 x 360 x 80
Protection class	IP54
Weight	31.5 kg

Data transmission

- Data transmission via primary cable (see page 25)



- Pick-up system with integrated power electronics
- Additional 24 VDC output as auxiliary voltage
- Parallel connection of several pick-up systems possible

SKILLET CONVEYOR

Conventional power supply (conductor bars) underneath skillet platforms require maintenance and inspection due to dirt and debris.

With CPS®, no maintenance is required and the system is unaffected by dirt or debris. In addition, due to the contactless nature, risk mechanical damage to the power supply components is greatly reduced even in critical track sections such as lifting stations and transfer stations.

Advantages for skillet conveyors

- No wear and tear on mechanical components
- Trouble-free and safe “threading” on transfer stations
- Maintenance-free
- Maximum utilization
- Unaffected by environmental hazards
- Trouble-free functionality even in damp conditions
- Data transmission via primary cable

Flat pick-up PS 18 compact

Capacity	1.3 kW at 60% ED
(nom./peak)	2 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH)	395 x 360 x 185
Protection class	IP54
Weight	27.3 kg

Flat pick-up PS 19 compact

Capacity	2 kW at 60% ED
(nom./peak)	3 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH)	455 x 360 x 185
Protection class	IP54
Weight	32.5 kg

- Pick-up system with integrated power electronics
- Additional 24 VDC output as auxiliary voltage
- Parallel connection of several pick-up systems possible

Flat pick-up PU 18/PU 18 compact

Capacity	1.3 kW at 60% ED
(nom./peak)	2 kW max. 3 min.
Dimensions (LxWxH)	
PU 18	620 x 360 x 80
PU 18 compact	370 x 360 x 185
Protection class	IP54
Weight	22 kg

Flat pick-up PU 19/PU 19 compact

Capacity	2 kW at 60% ED
(nom./peak)	3 kW max. 3 min.
Dimensions (LxWxH)	
PU 19	705 x 360 x 80
PU 19 compact	455 x 360 x 185
Protection class	IP54
Weight	24 kg

- Pick-up unit only in connection with a separate voltage regulation (see page 26)
- Parallel connection of several pick-up units to one voltage regulatior possible

U-shaped pick-up PP 25/F

Capacity (nom./peak)	470 W/1200 W
Output voltage	400 VDC ... 690 VDC
Dimensions (LxWxH)	108 x 110 x 210
Protection class	IP54
Weight	5 kg

- Pick-up system with passive power electronics
- Parallel connection of several pick-up systems possible

TRANSFER CAR

Flat pick-up systems for transfer cars

The pick-up facilitates the inductive transmission of the energy provided by the primary cable. There are different types of pick-ups available, depending on the area of application.

Flat pick-up PS 18

Capacity	1.3 kW at 60% ED
(nom./peak)	2 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH) ...	765 x 360 x 80
Protection class	IP54
Weight	26.3 kg

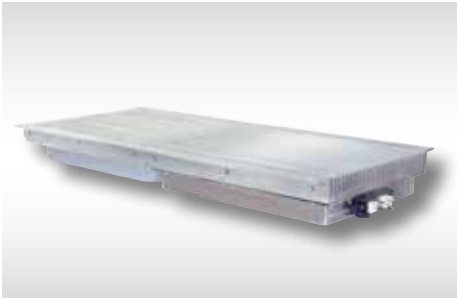
Flat pick-up PS 08

Capacity	350 W/500 W with heat sink
(nom./peak)	170 W without heat sink
Output voltage	24 VDC
Dimensions (LxWxH) ..	310 x 210 x 98
Protection class	IP54
Weight	7.3 kg

- Pick-up system with integrated power electronics
- Optionally with 24-27 VDC output for battery charging
- Parallel connection of several pick-up systems possible

Flat pick-up PS 19

Capacity	2 kW at 60% ED
(nom./peak)	3 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH) ...	895 x 360 x 80
Protection class	IP54
Weight	31.5 kg



- Pick-up system with integrated power electronics
- Additional 24 VDC output as auxiliary voltage
- Parallel connection of several pick-up systems possible

TRANSFER CAR

In heavy industry applications (steel mills or aluminum smelters), general warehouse or even clean-rooms, rail-mounted transfer cars are frequently used for transporting material between working stations.

By utilizing CPS® for power supply, the track remains free of any interfering structures or obstacles, allowing cross traffic to flow unimpeded.

Advantages for transfer cars

- Barrier-free track path
- Maintenance-free
- Maximum utilization
- Unaffected by environmental hazards
- Trouble-free functionality even in damp conditions
- Data transmission via primary cable

Flat pick-up PS 18 compact

Capacity	1.3 kW at 60% ED
(nom./peak)	2 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH)	395 x 360 x 185
Protection class	IP54
Weight	27.3 kg

Flat pick-up PS 19 compact

Capacity	2 kW at 60% ED
(nom./peak)	3 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH)	455 x 360 x 185
Protection class	IP54
Weight	32.5 kg

- Pick-up system with integrated power electronics
- Additional 24 VDC output as auxiliary voltage
- Parallel connection of several pick-up systems possible

Flat pick-up PU 18/PU 18 compact

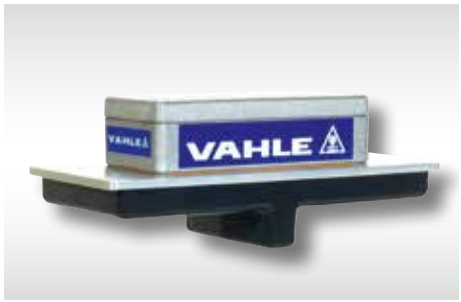
Capacity	1.3 kW at 60% ED
(nom./peak)	2 kW max. 3 min.
Dimensions (LxWxH)	
PU 18	620 x 360 x 80
PU 18 compact	370 x 360 x 185
Protection class	IP54
Weight	22 kg

Flat pick-up PU 19/PU 19 compact

Capacity	2 kW at 60% ED
(nom./peak)	3 kW max. 3 min.
Dimensions (LxWxH)	
PU 19	705 x 360 x 80
PU 19 compact	455 x 360 x 185
Protection class	IP54
Weight	24 kg

- Pick-up unit only in connection with a separate voltage regulation (see page 26)
- Parallel connection of several pick-up units to one voltage regulatior possible

Data transmission



- Data transmission via primary conductor (see page 25)

EMS – ELECTRIFIED MONORAIL SYSTEM

U-shaped pick-up systems for electric monorail systems

VAHLE's twin conductor system specifically developed for this application has proven its suitability due to its outstanding EMF/EMC properties. The U-shaped design of the pick-up coil surrounds the primary cable resulting in a high efficient electromagnetic coupling.

U-shaped pick-up PU 14

Capacity (nom./peak) . 900 W/1800 W
Output voltage ..... 250 VAC
Dimensions (LxWxH) ... 155 x 139 x 152
Protection class IP54
Weight ..... 3.72 kg

- Pick-up unit only in connection with a separate voltage regulation (see page 26)
- Parallel connection of several pick-up units to one voltage regulator possible

Advantages for electrified monorail systems

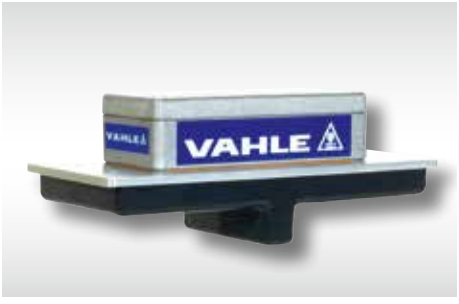
- “C1” conformity
- Suitable for complex track layouts
- No contamination of conveyed material due to carbon abrasion
- Easy installation due to special fixture technology
- No restriction to travel speed
- Maintenance-free
- Maximum utilization
- Unaffected by environmental hazards
- Trouble-free operation even in damp conditions
- Data transmission via primary cable

EMS

In the automotive as well as various other industrial sectors electrified monorail systems with numerous individually driven carriers are used to transport assembly related components and materials. CPS® components fully integrate into the carrier support track for required power supply. Track switches and lifts may be incorporated as needed to integrate several vertical levels of products.

Additionally, the system’s availability is increased as contactless operation eliminates wear components and their required maintenance down periods.

Data transmission



- Data transmission via primary cable (see page 25)

SORTATION TECHNOLOGY

U-shaped pick-up systems for sortation technology

Power supply components must meet the high demands, limited space and high travel speeds associated with sortation applications.

VAHLE designed a range of very compact U-pick ups to meet these requirements.

U-shaped pick-up PU 11

Capacity (nom./peak) .. 300 W/900 W
Output voltage ..... U_0 = 110..125 VAC, 20kHz
U_N=75...105 VAC, 20kHz
Dimensions (LxWxH) 150 x 73 x 95.5
Protection class IP54
Weight ..... 1.26 kg

- Pick-up unit only in connection with a separate voltage regulation (see page 26)
- Parallel connection of several pick-up units to one voltage regulator possible

Advantages for sortation technology

- No restriction to travel speed
- Quiet operation
- Maintenance-free
- Maximum utilization
- Unaffected by environmental hazards
- Trouble-free operation even in damp conditions
- Data transmission via primary cable

SORTATION TECHNOLOGY

For transportation and sortation of parcel packages, luggage or other cargo, distribution centers use large automated sortation systems which presort the items and prepare them for distribution to their destinations.

CPS® technology increases your system's availability and reliability. Contactless operation eliminates several wear components, reducing/eliminating maintenance and down times.

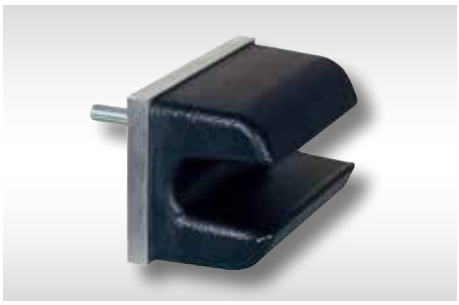
U-shaped pick-up PU 14

Capacity (nom./peak) . 900 W/1800 W
Output voltage ..... 250 VAC, 20 kHz
Dimensions (LxWxH) ... 155 x 139 x 152
Protection class IP54
Weight ..... 3.72 kg

- Pick-up unit only in connection with a separate voltage regulation (see page 26)
- Parallel connection of several pick-up units to one voltage regulator possible

U-shaped pick-up PK 31

Capacity (nom./peak).. 300 W/900 W
Dimensions (LxWxH) ... 114 x 75 x 65
Protection class IP65
Weight ..... 1.2 kg



- Pick-up unit for very confined installation spaces
- Necessary separate rectifier unit is available (optional)

CLEAN-ROOM TECHNOLOGY

U-shaped pick-up systems for clean-room technology

Due to the very high electrical power requirements of equipment installed in clean-room technology, the use of U-shaped or E-shaped pick-ups is a preferred option. These designs provide particulary high electromagnetic coupling with the primary conductor's magnetic field and assure optimum current transfer.

U-shaped pick-up PU 14

Capacity (nom./peak) . 900 W/1800 W
Output voltage ..... 250 VAC, 20 kHz
Dimensions (LxWxH) ... 155 x 139 x 152
Protection class IP54
Weight ..... 3.72 kg

- Pick-up unit only in connection with a separate voltage regulation (page 26)
- Parallel connection of several pick-up units to one voltage regulator possible

Advantages for clean-room technology

- No contamination of the environment caused by carbon abrasion
- Clean-room class 1 in accordance with US Fed. Std. 209
- Maintenance-free
- Maximum utilization
- Unaffected by environmental conditions
- Trouble-free functionality even in damp conditions
- Data transmission via primary cable

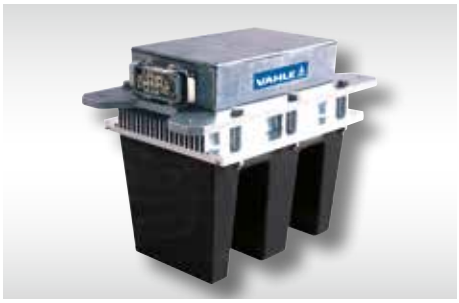
CLEAN-ROOM TECHNOLOGY

Special operating conductions such as high travel speeds, difficult environmental conditions, and high demands on a clean production area (clean room) require a special solution for power supply. CPS® offers an optimal solution thanks to its contactless transmission which produces no debris or dust from wear components.

Additionally, CPS® is unaffected by moisture or other chemicals present in the application, allowing the system surface to be clean and maintained as required.

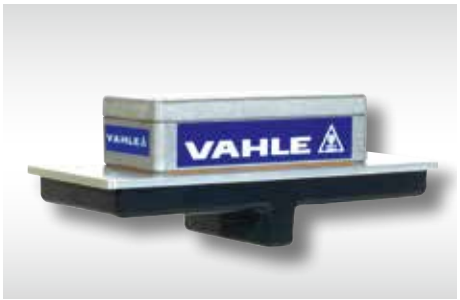
E-shaped pick-up PU 22

Capacity (nom./peak) . 10 kW/22 kW
Output voltage ..... 225 VAC, 20 kHz
Dimensions (LxWxH) ... 250 x 420 x 322
Protection class IP54
Weight ..... 29 kg



- Pick-up unit only in connection with a separate voltage regulation (page 26)
- Parallel connection of several pick-up units to one voltage regulator possible

Data transmission



- Data transmission via primary cable (see page 25)

ELEVATOR SYSTEMS

Flat pick-up and U-shaped pick-up for elevators

Depending on required capacity and existing installation space at the elevator cab, both flat pick-ups and U-shaped pick-ups are suitable for this application.

Advantages for elevators

- Unlimited travel speed
- Unlimited elevation height
- Ideal for inclined elevators
- Maintenance-free
- Maximum utilization
- Unaffected by environmental conditions
- Trouble-free functionality even in damp conditions
- Data transmission via primary cable

ELEVATOR SYSTEMS

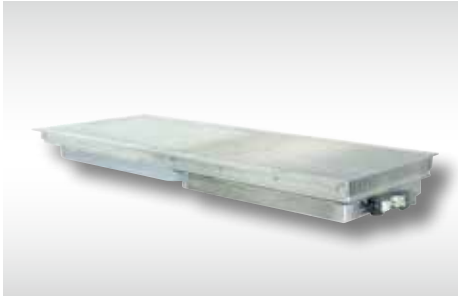
As an alternative to the traveling cable, CPS® technology perfectly meets the power requirements to be supplied to an elevator cab, maintenance-free and reliable, regardless of the ambient conditions. Whether it is for the standard elevator or the inclinator: This alternative offers elevator systems completely new opportunities without any restrictions to speed or elevation heights.

Flat pick-up PS 18

Capacity	1.3 kW at 60% ED
(nom./peak)	2 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH) ...	765 x 360 x 80
Protection class	IP54
Weight	26.3 kg

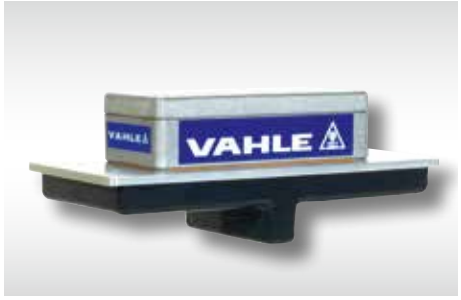
Flat pick-up PS 19

Capacity	2 kW at 60% ED
(nom./peak)	3 kW max. 3 min.
Output voltage	560 VDC
Dimensions (LxWxH) ...	895 x 360 x 80
Protection class	IP54
Weight	31.5 kg



- Pick-up system with integrated power electronics
- Additional 24 VDC output as auxiliary voltage
- Parallel connection of several pick-up systems possible

Data transmission



- Data transmission via primary cable (see page 25)

PRIMARY INVERTER UNIT

Primary inverter switch cabinet

As the centerpiece of the contactless power supply, the primary inverter delivers the required electrical power for all mobile consumers located on the track. Standard three-phase alternating current of 400 V / 50 Hz (or different regional standards) is initially converted to single-phase alternating current of 20 kHz and then fed to the primary cable at a constant current of 70 A. A suitable diagnostics interface is available for displaying or monitoring the actual operating condition.

Complete cabinet 11 kW

Capacity (nom./peak)	8.8 kW/11 kW
Supply voltage	3 x 400 VAC
Protection class	IP54
Temperature range	0 – 30 °C
Dimensions (HxWxD)	2000 x 1200 x 500 + 200 mm socket

Complete cabinet 45 kW

Capacity (nom./peak)	36 kW/45 kW
Supply voltage	3 x 400 VAC
Protection class	IP54
Temperature range	0 – 30 °C
Dimensions (HxWxD)	2000 x 1200 x 500 + 200 mm socket

- Cabinet ready for use
- Technical design depending on installed system
- Design according to customer specifications
- Several cabinets can be interconnected for large systems with a high power requirements

PRIMARY INVERTER UNIT

Mounting plate 11 kW

Capacity (nom./peak).. 8.8 kW/11 kW
Supply voltage ..... 3 x 400 VAC
Protection class IP00
Temperature range ..... 0 – 30 °C
Dimensions (WxH) ..... 700 x 1900

Mounting plate 45 kW

Capacity (nom./peak).. 36 kW/45 kW
Supply voltage ..... 3 x 400 VAC
Protection class IP00
Temperature range ..... 0 – 30 °C
Dimensions (WxH) ..... 700 x 1900

- All 20 kHz CPS® components are pre-mounted and completely wired
- Installation in an existing power switch cabinet
- Supply with 400 V, three-phase alternating current
- 20 kHz output for supplying the primary loop

The primary inverter units shown here are typically suitable for all areas of application indicated in this catalog. From a technical and economical aspect, an optimal solution in regards to the specific conditions of your application is possible with our experienced project team.

Whether a complete cabinet, mounting plate, or compact unit is needed, VAHLE team members are available to help you select the best suitable components

Compact cabinet 4 kW

Capacity (nom./peak).. 3.2 kW/4 kW
Supply voltage ..... 3 x 400 VAC
Protection class IP54
Temperature range ..... 0 – 30 °C
Dimensions (HxWxD)... 700 x 540 x 302

- Operational for the connection to the primary conductor
- Very compact construction
- Highly suitable for small stand-alone systems
- Integration into larger systems possible

TRACK EQUIPMENT

Track equipment

A loop (primary cable) must be installed along the track to supply the mobile consumers with the power created in the primary inverter unit. Depending on the type of conveying system, the primary cable can be laid underground, i.e. into the floor, or above ground, such as on the runway beam. Compensation boxes must be installed along the track for long distances in order to compensate the cable inductivity.

Track compensation KB 10

Dimensions (HxWxD) ... 194 x 154 x 100
Protection class IP65
Weight ..... 1.5 kg

- Compact design
- Positioning near track possible
- A box is required every 33 to 44 m

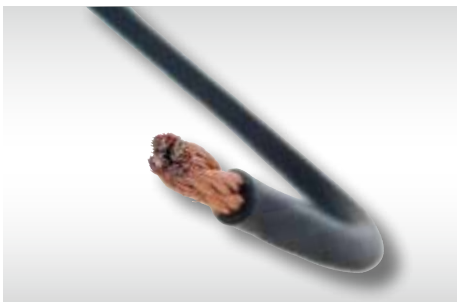
Primary cable 8x4

Area of application ..... Floor skid conveyor
Diameter..... 15.7 mm
Weight ..... 0.49 kg/m

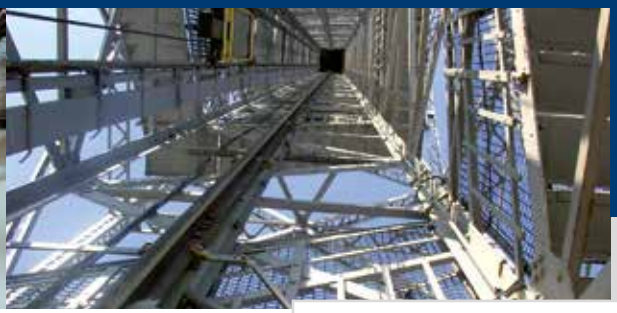
- For standard applications
- Single insulated copper conductors
- Easy installation with standard cable tools

Primary cable HF 25

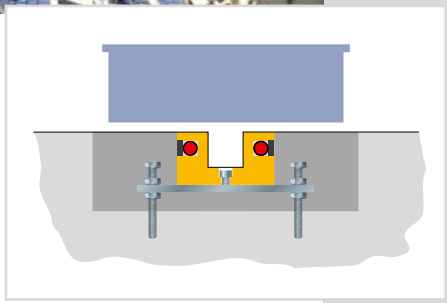
Area of application ..... EMS
Diameter..... 11 mm
Weight ..... 0.28 kg/m



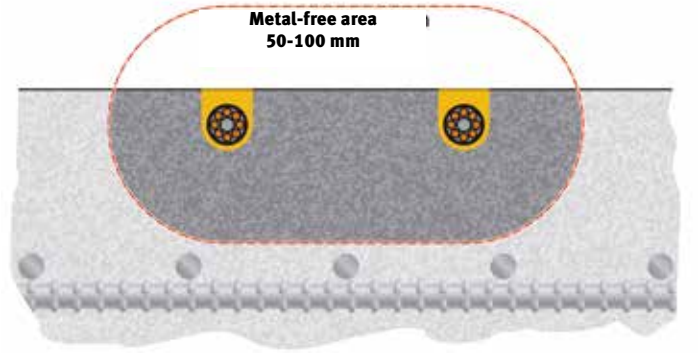
- For EMS and sortation technology applications
- Special conductor made of single insulated copper braid
- Small outside diameter

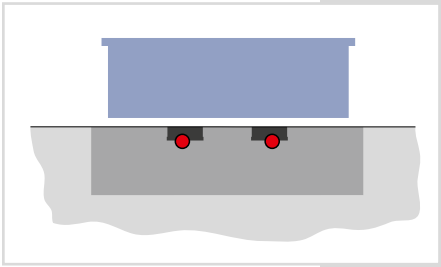


LAYOUT METHODS

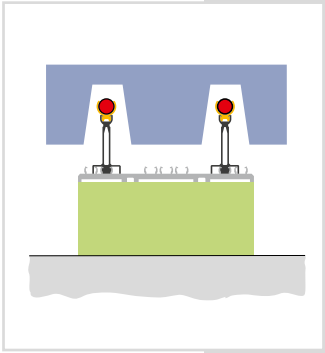


Primary cable installation example:
Installed inside vehicle guide track





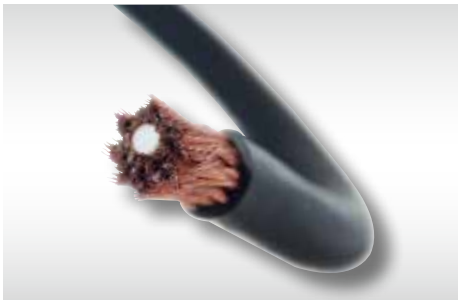
Primary cable installation example:
Cable installed directly into the floor



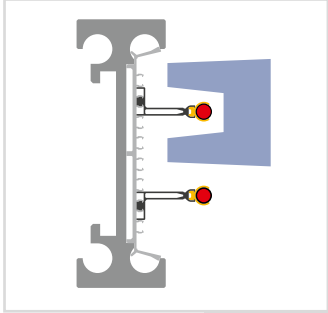
Primary cable installation example:
Cable on special support

Primary cable HF 50

Area of application..... Floor skid conveyor/crane installations
Diameter..... 16.5 mm
Weight..... 0.56 kg/m

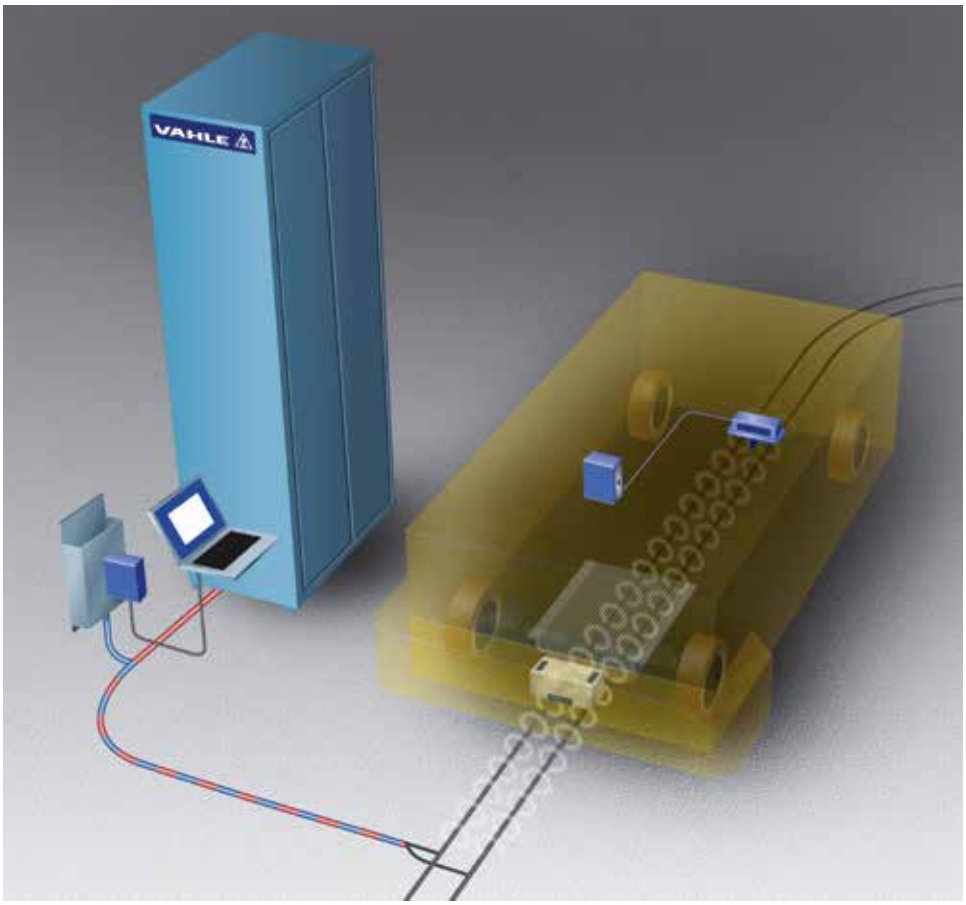


- For very long track sections
- Special conductor made of single insulated copper braid
- Very low power loss due to large conductor cross section



Primary cable installation example:
Cable in an EMS profile

DATA TRANSMISSION



Data transmission

Many modern applications require control signals in addition to power, to their drive motors. To transmit signals from a central PLC to the mobile units via radio transmission is limited due to susceptibility to outside interference. CPS® offers an attractive alternative by allowing the use of the primary conductors for interference free data transmission. This concept of the integrated data transmission "VAHLE Powercom® CPS®" is designed for reliable transmission of control data with a data rate of 19.2 kbps based on a standard RS485 interface as featured by the Profibus DP, for example.

Transceiver TU 01

Area of application ..... Floor skid conveyor/EMS
Supply voltage ..... 24 VDC
Transmission rate..... 19.2 kBit/s
Dimensions (LxWxH) ..... 40 x 111 x 74
Protection class IP40
Weight ..... 500 g

- Connection to the antenna or charging coupler
- RS485 interface e.g. for Profibus DP

Charging coupler CC

Area of application ..... Floor skid conveyor/EMS
Supply voltage ..... 24 VDC
Dimensions (LxWxH) ..... 162 x 380 x 145
Protection class IP10
Weight ..... 4 kg

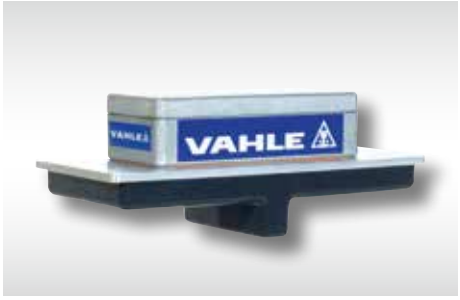
- Stationary arrangement at the beginning of the track
- Modulates the data stream of the stationary transceivers to a carrier frequency and transmits it to the primary cable

Data transmission benefits with VAHLE Powercom® CPS®

- No additional components necessary along the track by Utilizing the primary cable for transmitting the data signal
- Data rate 19.2 kbps
- Absolute interference free transmission due to the high frequency separation to the currently common radio trans -mission systems
- Subsequent changes to the number of vehicles or to the mechanical environment can be easily made without carrying out a complex HF field analysis
- Fully transparent transmission of the data signal without modifying the programming software

ANT F/ANT E antenna

Area of application ..... vehicle side
ANT F..... in combination with flat pick-up
ANT E ..... in combination with U-shaped pick-up
Dimensions (LxWxH)
ANT F..... 100 x 238 x 85
ANT F..... 100 x 150 x 85
Weight
ANT F..... 1.3 kg
ANT E ..... 1.0 kg
Protection class IP65



- Arrangement on the vehicle
- Receives the carrier frequency from the primary cable and forwards this frequency to the transceiver on the vehicle for demodulation

RF-termination box AB

Area of application ..... Floor skid conveyor/EMS
Supply voltage ..... 24 VDC
Dimensions (LxWxH) ..... 600 x 760 x 210
Protection class IP54
Weight ..... 32 kg

- RF-termination of the data transmission path
- Undesirable RF- reflections are filtered out

VOLTAGE REGULATION/ TRACK GUIDANCE

Voltage regulation

A wide range of voltage regulation units for providing supply voltages on the vehicle side of the conveyor system deviating from the 560 VDC supply commonly available can be supplied. These voltage regulation units are connected downstream from the pick-up units and provide application-specific custom voltages, such as for charging batteries or UltraCaps.

CPS® track guidance sensor SS-01 / 02

Area of application ..... Floor skid conveyor
Output signal ..... 4-20 mA, 0-20 mA, 0-10 V, 0-5 V, Profibus
Dimensions (LxWxH) .... 160 x 80 x 60
Protection class IP65
Weight ..... 0.35 kg

- Inductive track guidance via primary conductor
- Suitable for switches and transfers

Voltage regulator RE 7.1

Area of application ..... Floor skid conveyor/EMS
Capacity (nom./peak) ..... depends on the pick-up connected, max. 3 kW
Output voltage ..... 288...680 VDC Auxiliary voltage 24VDC
Dimensions (LxWxH) .... 240 x 200 x 160
Protection class IP54
Weight ..... 5.8 kg

- For PU18/19 and PU14 series pick-ups
- Connection for a pick-up

Voltage regulator RE 7.4

Area of application ..... Floor skid conveyor/EMS
Capacity (nom./peak) ..... depends on the pick-up connected, 1.3 kW – 3 kW at 60% ED max. 2 kW – 9 kW
Output voltage ..... Battery charging/UltraCap 24 VDC, 48 VDC Standard: 288...680 VDC Auxiliary voltage 24 VDC
Dimensions (LxWxH) .... 320 x 320 x 203
Protection class IP54
Weight ..... 16 kg

- For PU18/19 and PU14 series pick-ups
- Connection of up to four PU14s or one PU 18/19
- Also for direct charging of batteries or UltraCaps

Voltage regulator RE 22

Area of application ..... Crane plants
Capacity (nom./peak) ..... for 1 pc PU 22 12.5 kW/20 kW – for 2 pieces PU 22 25 kW/40 kW
Output voltage ..... 288...680 VDC Auxiliary voltage 24 VDC
Dimensions (LxWxH) .... 660 x 328 x 290
Protection class IP20
Weight ..... 25.65 kg

- For PU22 series pick-ups
- Connection for upto two pick-ups

We can develop custom solutions for your company

The successful range of VAHLE systems is complemented by a comprehensive range of services tailored to meet our customer's requirements, including

- System design
- Project management
- Commissioning
- Engineering
- Installation supervising
- After-sales service
- Product training courses
- Maintenance packages

We will be glad to apply our expertise to develop specific solutions for your company. Give us a call and arrange for an appointment to learn more about VAHLE systems and services to meet your requirements.

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