

# Energy & Data Management Systems for Intralogistics





# We move your business



Conductix-Wampfler is a leading supplier of energy and data management systems that keep warehouses, parcel hubs, airports, and factories moving – worldwide – 24/7/365.

We help keeping our customers' systems smart, connected, and efficient – enabling automated processes and ensuring machine safety.



# State of the Art Intralogistics

## with solutions by Conductix-Wampfler

Intralogistics systems are a vital part of operations, with growing importance in today's competition – Conductix-Wampfler offers tailor-made solutions for energy and data management, having extensive knowledge of the market's requirements and trends, including decades of experience with most leading OEMs, system integrators and end-users.

Automated warehouses for electronic commerce, retail, food & beverage, fast moving consumer goods, micro-fulfilment, healthcare, electronics, fashion and other industries are no more at the fringes of the value chain, but at its' heart, guaranteeing quick fulfilment of customer orders. Receiving and storing, space efficient high-bay storage, order picking, dispatching and shipping, they all require a cost effective, powerful, sustainable, scalable and

flexible mix of technologies:

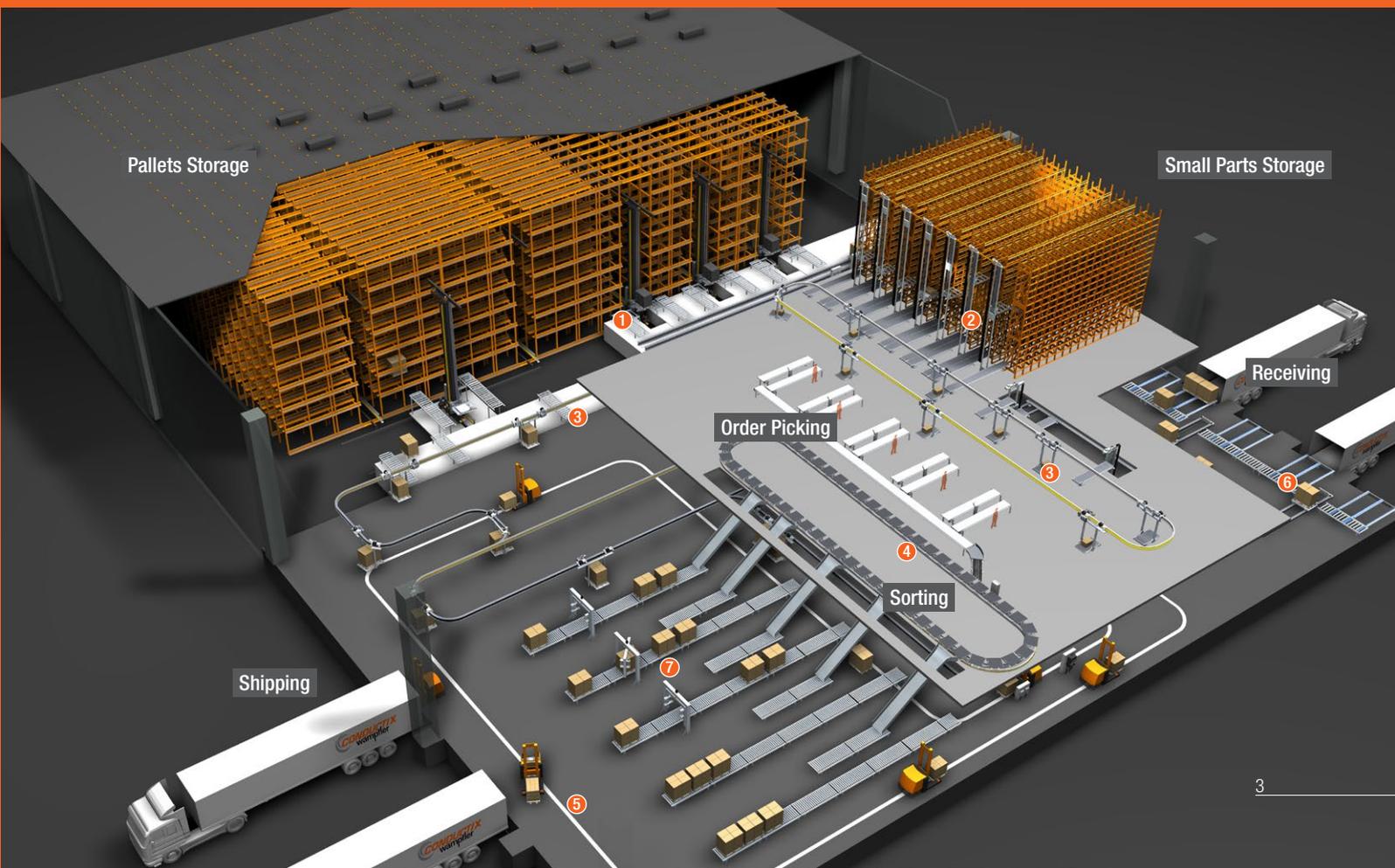
- Automated Storage & Retrieval Systems
- Shuttles
- Electric Monorail Systems
- Sorters
- Automated Guided Vehicles
- Autonomous Mobile Robots
- Rail Guided Vehicles
- Pallet Wrappers
- Extendable Conveyors
- Very Narrow Aisle Forklift Trucks

Airports require highly reliable baggage handling systems, including early baggage storage and sortation as well as air cargo handling systems such as Elevating Transfer Vehicles for Unit Load Devices loading the planes, while EMS and AGVs can assure automated flow of catering trolleys to and from the terminals.

Parcel hubs are designed for quick cross-dock operations that can handle the dynamic growth of eCommerce shipments with high-performance cross-belt sorters as well as scalable and flexible AMRs, for best possible cut-off-time of the hub for next- or even same day delivery.

Modern factories rely on electrified, smart conveyors or autonomous mobile robots to move goods along assembly lines or between production cells, often with fully integrated buffer storage. Such flexible and automated process flows allow cost effective production of small customized batches, close to the market using Industry 4.0 principles. Smart and connected devices allow full system transparency while predictive maintenance keeps availability at a maximum.

- ① AS/RS
- ② Shuttle
- ③ EMS
- ④ Sorter
- ⑤ AGV | AMR
- ⑥ RGV
- ⑦ Pallet Wrapper



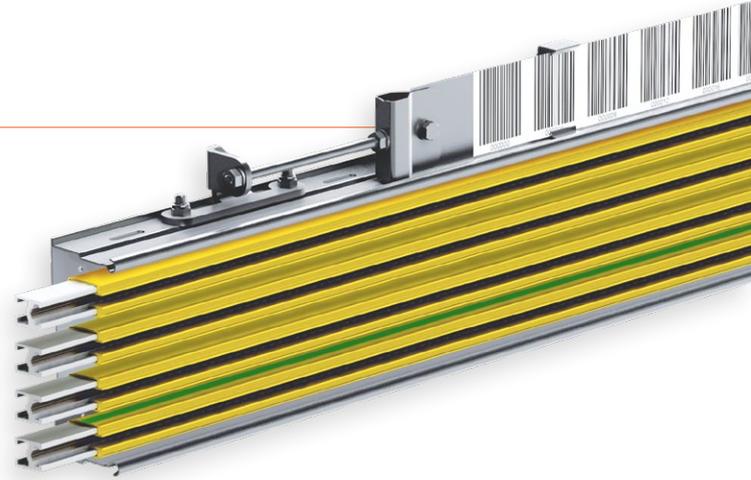
# AS/RS

## Key Solutions by Conductix-Wampfler



### Stacker Cranes – horizontal movement

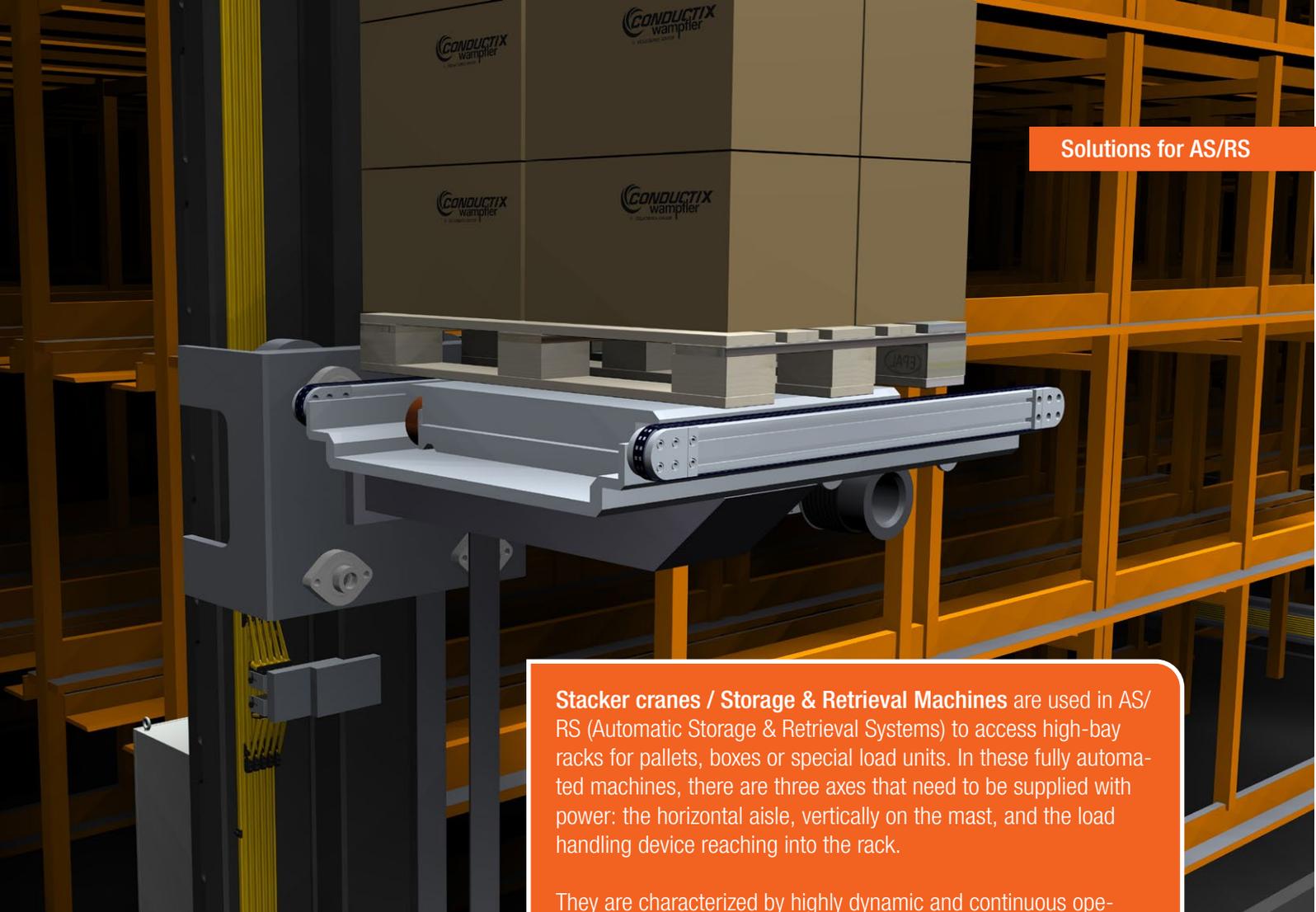
**ProShell** is a smart installation system for conductor rails that offers generous suspension spacing for high-bay warehouses and protects the conductor rail system. It is designed for maximum standardization and flexible installation of our proven and reliable conductor rail systems **0831 MultiLine** or **0812 SinglePowerLine**, optional quick-mount **barcode integration** is available. Cover 32 Amperes to 400 Amperes in a single design with scalable performance while maintaining cost control through rightsizing! **ProShell** is available in two sizes: up to 5 poles, and up to 8 poles.



#### 0812 SinglePowerLine CopperECO

With **CopperECO**, Conductix-Wampfler has brought an aluminum-copper innovation to the market for our approved **0812 SinglePowerLine** conductor rails. It enables even higher currents during standstill of heavy-duty stacker cranes, allowing for the lifting of pallets over several minutes in one position through increased surface-conductivity. This can eliminate the need for full-copper conductor rails in many cases and thus reduce considerable costs.



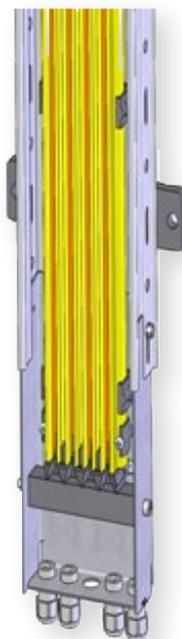


**Stacker cranes / Storage & Retrieval Machines** are used in AS/RS (Automatic Storage & Retrieval Systems) to access high-bay racks for pallets, boxes or special load units. In these fully automated machines, there are three axes that need to be supplied with power: the horizontal aisle, vertically on the mast, and the load handling device reaching into the rack.

They are characterized by highly dynamic and continuous operations, providing high throughput, while reducing the required footprint for storage space. Some warehouses also require cooling or sub-zero temperatures for food products or pharmaceuticals.

## Stacker Cranes – vertical movement

**MultiLine 0831** is a compact conductor rail that offers integration options for the AS/RS mast and provides long-life performance on this critical and dynamic axis. Current collectors mounted to the lift also help reduce the weight in motion and thus save energy. Compared to traditional cable chains, this increases efficiency and uptime, eliminating issues with the guidance of swinging cable chains.



## Multi Deep Pallets handling

In multi deep storage solutions, the load handling device needs a reliable power supply – our charging contacts can recharge super-capacitors on a pallet shuttle.

Alternatively, compact cable reels for continuous power supply and control signal transmissions are available.



# Shuttle Systems

## Key Solutions by Conductix-Wampfler

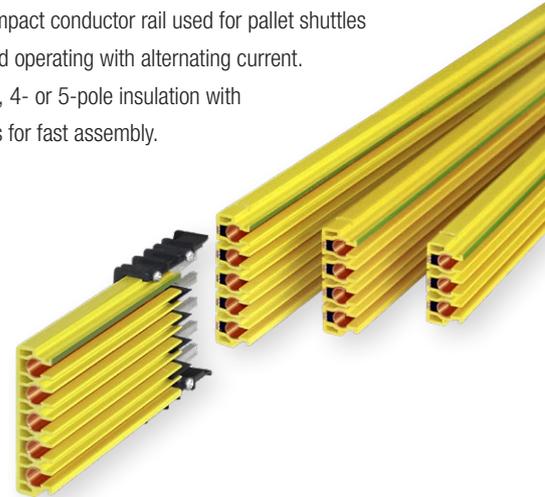


### Power for horizontal and vertical axes of shuttles

**MultiLine 0835** is the leading conductor rail system specifically designed for the requirements of shuttles using low-voltage safety DC. **ChargeLine 0865** is a high-dynamic charging segment for shuttles. The key features are a compact footprint and easy integration into shuttle drive rails as well as durability. It can also be used on the shuttle-lift in connection with long-life collectors – fit for thousands of cycles per day.



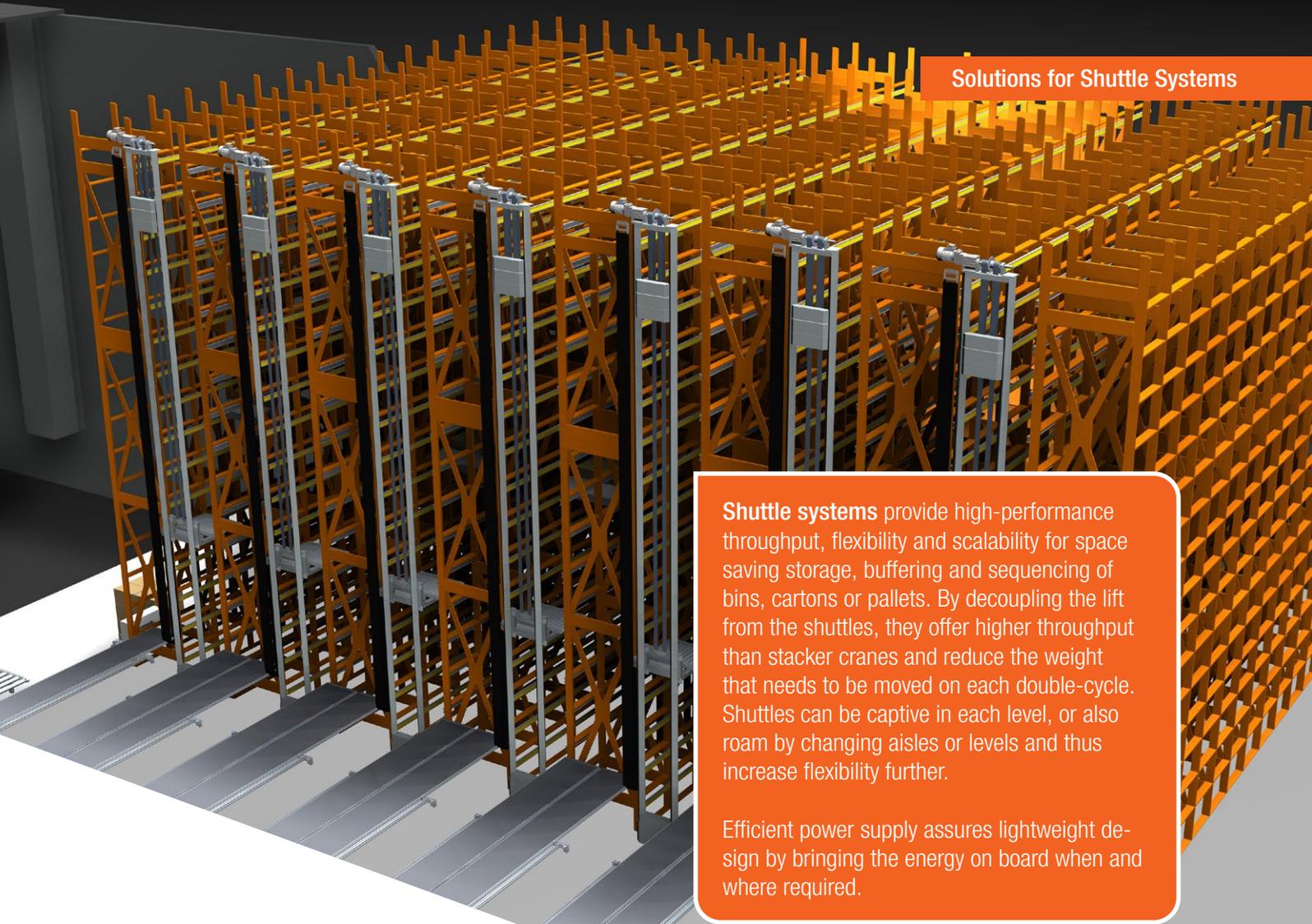
**MultiLine 0831** is a compact conductor rail used for pallet shuttles carrying higher loads and operating with alternating current. It features a compact 3-, 4- or 5-pole insulation with pre-mounted connectors for fast assembly.



### Data Transmission



**Nexus BB** is a powerline communication system for Ethernet with a data rate of up to 100 Mbit/s, using the phase lines of the AC or DC power transfer on the conductor rails supplying the shuttle, to ensure communication between higher-level control and the vehicle. **Nexus BB** acts as a virtual Ethernet cable and can connect several shuttle levels to one stationary transceiver, provided these are connected to the same power supply.



**Shuttle systems** provide high-performance throughput, flexibility and scalability for space saving storage, buffering and sequencing of bins, cartons or pallets. By decoupling the lift from the shuttles, they offer higher throughput than stacker cranes and reduce the weight that needs to be moved on each double-cycle. Shuttles can be captive in each level, or also roam by changing aisles or levels and thus increase flexibility further.

Efficient power supply assures lightweight design by bringing the energy on board when and where required.

## Safety

**Rubber- and Cellular Buffers** are important passive safety elements protecting personnel, racking structures and shuttles in case of a runaway. Special compounds and geometries assure maximum energy absorption in the given available space with minimum end forces.



**Jay RadioSafe** is a safety certified (SIL3 | PL-e) wireless fleet emergency stop for shuttles with on-board energy storage. It allows for safely switching off sections for maintenance, in case of fire alarms, etc.



## Battery Charging

The **Nano series** brings power to the on-board supercap or battery while the shuttles hand over loads to lifts or wait for their next order. It is designed with an ultra-compact footprint and features a copper-ramp for the collectors to engage, assuring maximum lifetime. **Nano** is particularly suited for pallet shuttles using safety low voltage ( $\leq 60$  V DC) and comes in different sizes, starting from 20 A, up to 50 A, 75 A and so on.



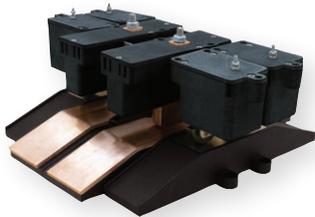
# AGV / AMR

## Key Solutions by Conductix-Wampfler



### Battery Charging

**Charging Contacts** offer an economical way for stationary direct charging of energy storages, including high powers of up to 600 Am-pere. The **Enduro+** series features a particularly high mechanical tolerance and long-life copper ramps, minimizing wear.



**Wireless Charger 3.0** for stationary in-process opportunity charging offers unique advantages in all facilities, making robots more produc-tive! Single phase power keeps the requirements on infrastructure low and provides up to 3 kW power to the vehicles' pickup with its mobile power unit.



### Energy Storage

Fully scalable solution: **Lithium-Ion battery modules** for fast charg-ing or maximum energy density are a perfect match for our inductive or conductive charging solutions, whether at 24 or 48 Volts. The "S-Box" integrates safety functions and the battery management system, while the cells are arranged in a module to fit the smallest possible space, while serving capacity and charging current needs.



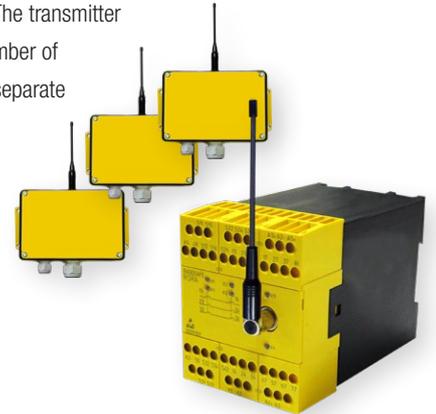
## Contactless Energy Transfer

**Inductive power transfer** – continuous, wireless power transfer on even and unobstructed floors for all AGVs that follow a fixed path, such as during an assembly process – including switches and complex track arrangements. It can also be combined in a hybrid system with batteries being recharged on a partially powered track. Different types of on-board pickups can provide DC power for safety low voltage but also power for inverter-controlled AC-drives.



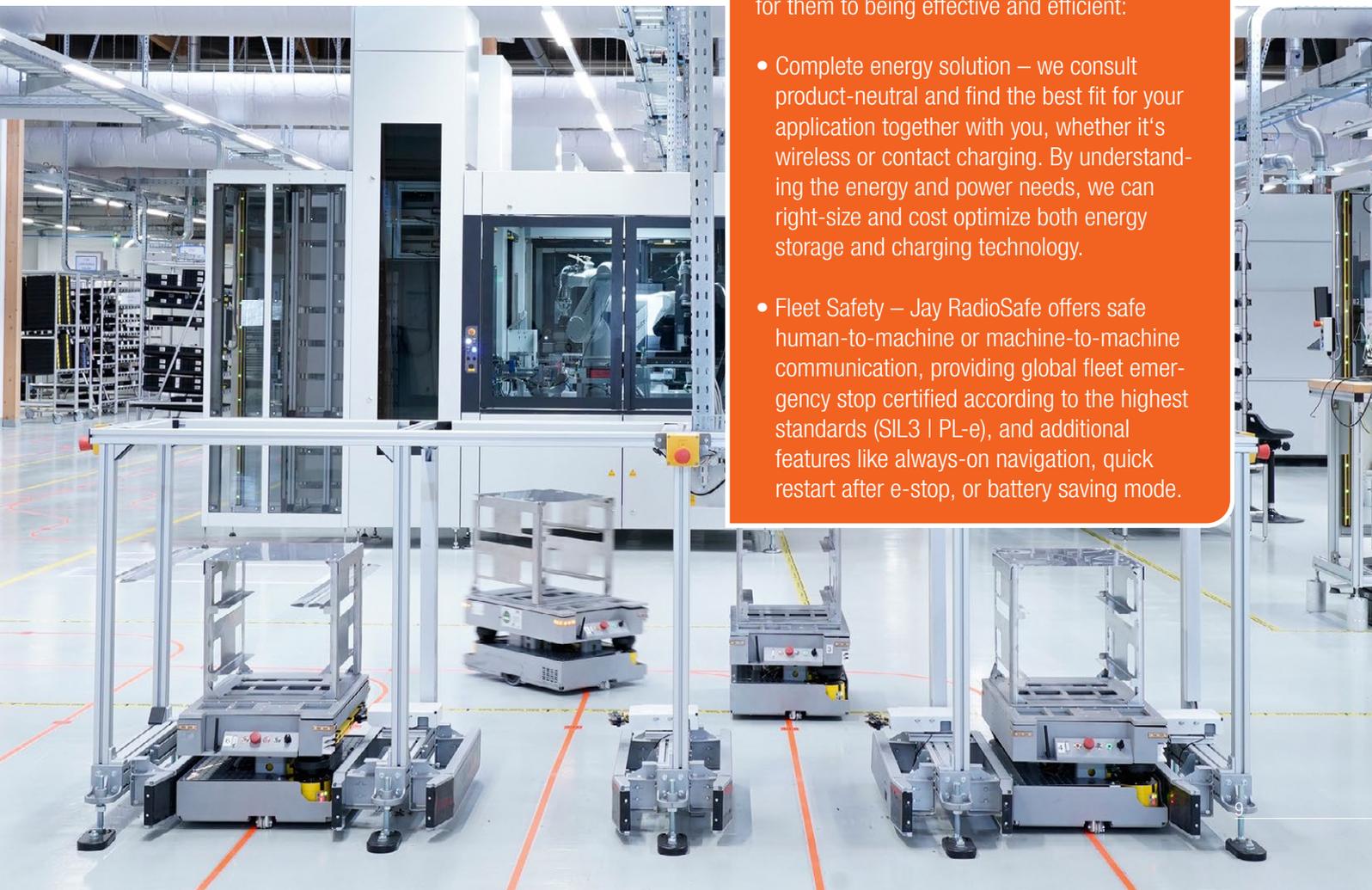
## Safety

**Jay RadioSafe** is a safety certified (SIL3 | PL-e) wireless fleet emergency stop for AGVs / AMRs. The transmitter can address an unlimited number of vehicles on ISM-radio bands, separate from industrial WLAN systems. Additional functions include always-on navigation, instant restart after e-stop, and battery saving mode.



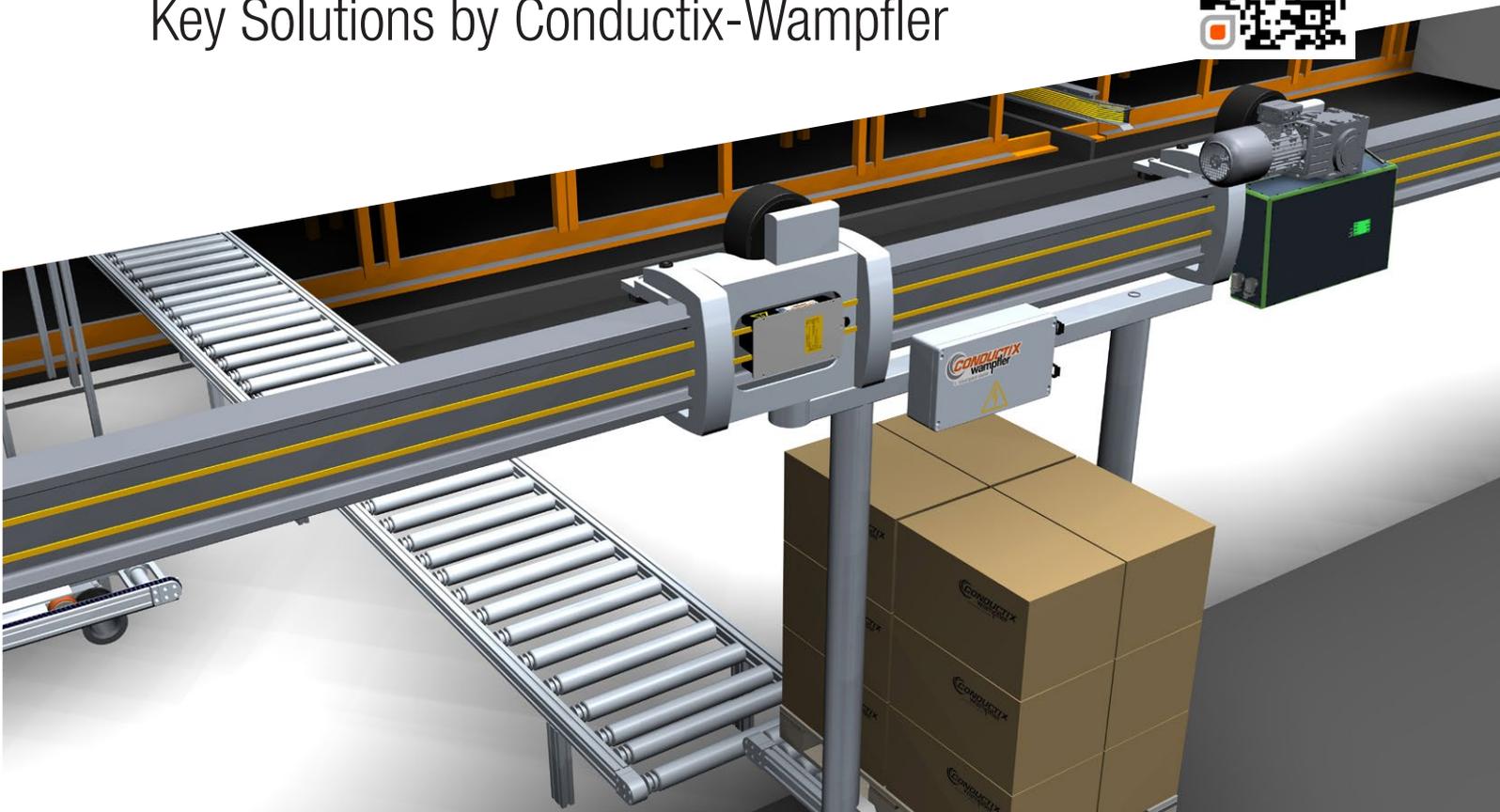
**Automated Guided Vehicles and Autonomous Mobile Robots** bring maximum flexibility and scalability to operations. Conductix-Wampfler offers two key features for them to be effective and efficient:

- Complete energy solution – we consult product-neutral and find the best fit for your application together with you, whether it's wireless or contact charging. By understanding the energy and power needs, we can right-size and cost optimize both energy storage and charging technology.
- Fleet Safety – Jay RadioSafe offers safe human-to-machine or machine-to-machine communication, providing global fleet emergency stop certified according to the highest standards (SIL3 | PL-e), and additional features like always-on navigation, quick restart after e-stop, or battery saving mode.



# EMS

## Key Solutions by Conductix-Wampfler



### Power and Data Transfer

**ProEMS 0815** is a conductor rail system optimized for the specific needs of Electric Monorail Systems.

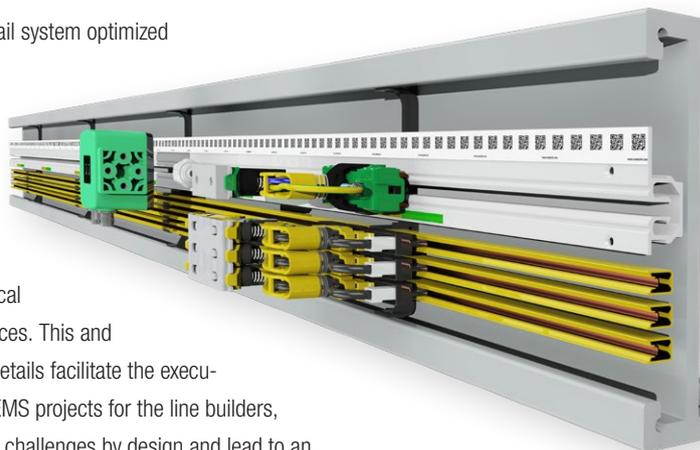
The current collectors feature integrated guidance of the connection cables and

increased

mechanical

tolerances. This and more details facilitate the execution of EMS projects for the line builders,

avoid typical challenges by design and lead to an improved system availability and lifetime for end users.



**ProfiDAT® compact** is a slotted-waveguide data transmission system for Ethernet communication and optional integrated protective earth and bar-code positioning functions. It fits secure and shielded high-bandwidth Ethernet communication into the compact space of an aluminum EMS-profile.

### Mobile Controls

**LJU 8-series** compact controls for EMS and electric pallet conveyors offer easy and modular system configuration and state-of-the-art control architecture. By integrating all necessary smart functions, including inverter control of drives in an ultra-compact box, it makes EMS projects much more simple to execute and provides operators with long-term investment security and ease of operations.



## Contactless Energy Transfer

**Inductive power transfer** provides unique advantages to operators of electric monorails by reducing the need for maintenance through contactless power transfer. Health and safety are improved by preventing abrasive dust, any open galvanic contacts and reducing noise during operation.



**Electric Monorail Systems and Electric Pallet Conveyors** enable fully automatic material flow at high throughput.

Conductix-Wampfler provides **mobile controls, conductor rail systems ProEMS, data transmission, inductive power and smart sensor solutions** for all kinds of EMS.

**After sales service** is an integral part of high availability through the entire life cycle of the conveyor system.

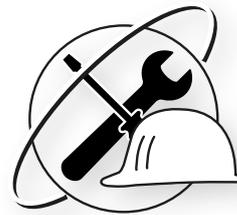
## Safety

**Rubber- and Cellular Buffers** are important passive safety elements, providing basic protection to the EMS trolleys. With a compact design and light weight, they can absorb impact energy and reduce reactive forces.



## Service

**Services** such as on-site installations, commissioning, inspections, maintenance, trainings, refurbishments and spare part provision are



of particular importance in all Electric Monorail Systems.

Conductix-Wampfler is there to support you from regional service centers worldwide; in Europe, Africa and the Middle-East, the Americas, and the Asia-Pacific region.



# Sorters

## Key Solutions by Conductix-Wampfler



### Power and Data Transfer



**0811 SingleFlexLine** is a conductor rail system typically used in loop- or line sorter applications, as well as baggage handling systems. Pure-graphite collector brushes assure optimized lifetime and minimal wear in continuously operating systems with high speeds of up to 3 m/s.

**ProfiDAT® compact** is a slotted-waveguide data transmission system for Ethernet communication and optional integrated protective earth and barcode positioning functions.

It fits secure and shielded high-bandwidth Ethernet communication into the compact space of the sorter base frame.



**Cross-belt or tilt-tray sorters** both in baggage handling systems and parcel sortation have to be extremely reliable and are designed for constant, high-speed operation of up to 3 m/s.

**Conductor rail systems SingleFlexLine 0811** with long-life collectors, combined with high-bandwidth **ProfidAT compact** and no-contact **inductive power transfer systems** are the solutions of choice.

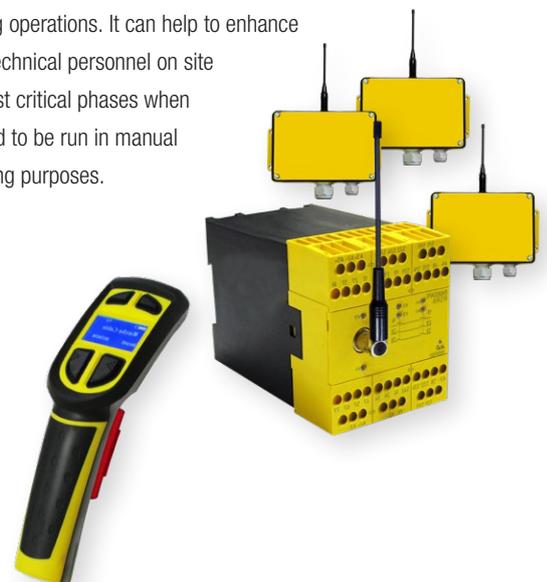
## Contactless Energy Transfer

**Inductive power transfer** provides unique advantages to operators of sorters by reducing the need for maintenance through contactless power transfer – a key advantage due to the high daily mileage covered by sorters. Specific E-pickups and regulators providing output of 48-65 V for typical cross-belt actuators assure efficient electrification of the DC-bus connecting the carriers.



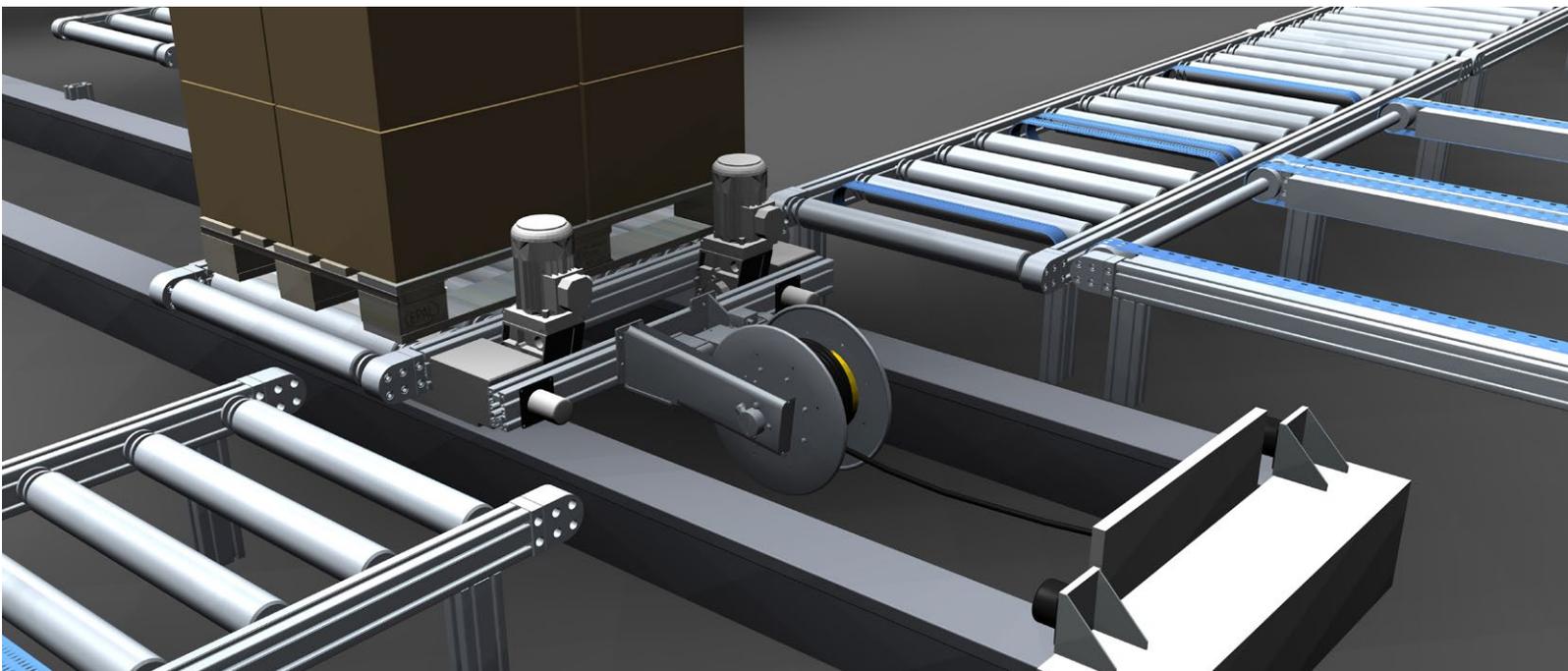
## Safety

**Jay RadioSafe** is a safe wireless radio solution that enables loop sorters to be run and stopped remotely during maintenance and commissioning operations. It can help to enhance safety for all technical personnel on site during the most critical phases when machines need to be run in manual mode for testing purposes.



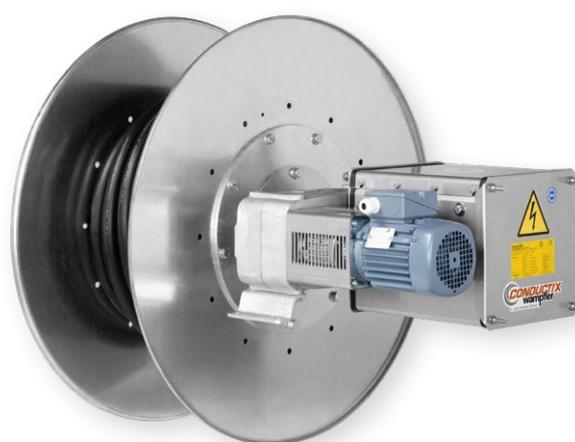
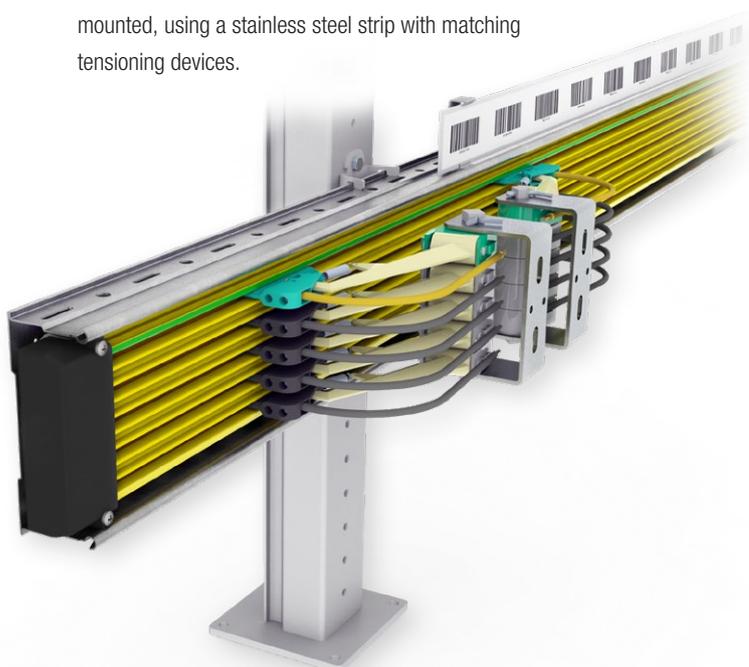
# Rail Guided Vehicles | RGV

Key Solutions by Conductix-Wampfler



## Energy Transfer

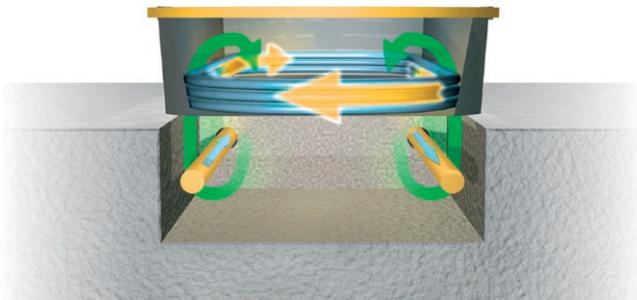
**0831 MultiLine and ProShell** are a perfect match in most high-speed / high-acceleration transfer cars – a multipole conductor rail system integrated in a steel mounting profile that provides 3-side protection and the option to integrate a barcode that can be quickly mounted, using a stainless steel strip with matching tensioning devices.



**Motor driven cable reels** offer an ideal solution for transfer cars traveling at low to medium speeds (100 m/min). With combined cables for energy and data transmission most control concepts can be easily realized at competitive costs.

## Contactless Energy Transfer

**Inductive power transfer** can make barrier-free power transfer a reality—and thus enable cross-traffic on the transfer-car line a viable option. For such a floor-system the induction cable loop is integrated in the flat floor. But also a rail system using E-pickups can offer unique advantages, like virtually maintenance-free high-speed operations of the RGVs including sensitive, clean or harsh environments.



## Safety

**Rubber- and Cellular Buffers** are passive safety elements protecting rail guided vehicles and can be mounted on the vehicle as well as on the end-stops. Conductix-Wampfler can help you choose the right material type, shape, energy absorption and end-forces from a wide range of our standard portfolio.



For Transfer cars or Rail Guided Vehicles, product-neutral consultancy results in optimal solutions. Whether your key criterium is barrier-free energy transfer, a clean environment, or something else – we help you choose the best technical/commercial option for the entire lifecycle of the system.



# www.conductix.com

**Conductix-Wampfler** has just one critical mission: To provide you with energy and data management systems that will keep your operations up and running 24/7/365.

To contact your nearest sales office, please refer to: **www.conductix.contact**

