WCPS on-floor charging infrastructure – plateau solution

For industrial, hygiene and cleanroom applications

- Product launch: August 2023
- Product type: ramps loading infrastructure for floor mounting
- Robot type used: KUKA Mobile Robot iiwa
- Charging Pad: Wiferion etaLINK 3000
- Challenge: Modular ramp that grows with the robot, flat installation height. Suitable also for hygienic areas and ISO3 cleanrooms.
- The product solution: stainless steel ramp made of modular systems with dissipative, cleanroom-compatible special flooring and PCX cover.

The project in brief

Wireless Charging plateau solution

Context:
If the installation of the WCPS in-floor or WCPS raised floor solution is not possible in certain manufacturing and logistics areas, but robots are to be supplied with power contactlessly via the underfloor in these environments, the WCPS ramp solution takes on an important role as the raised floor infrastructure.

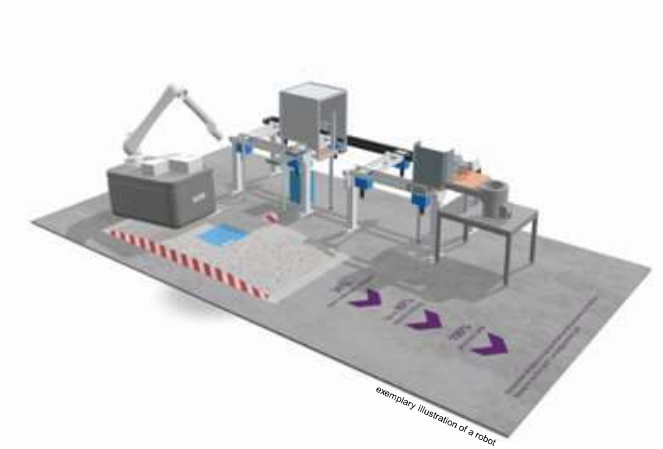
Solution:
The developed, very flat WCPS ramp system serves as a protective on-floor charging infrastructure for the contactless energy transfer technology. This makes it possible to contactlessly charge autonomous robots in the work process without structural intervention in the floor and without them having to leave the work area. The WCPS ramp system is positioned in or along travel paths in order to be able to recharge the AGV during short stopping times.

Result:
- Maximum availability of the robots thanks to safe energy supply in demanding working environments
- Walk-on and drive-over capability of the charging infrastructure
- Extremely slim basic design
- Easy expansion of the infrastructure on all routes thanks to modular design
- Ensuring a constant battery level along the working route
- Can be used in clean rooms up to ISO3 (material classification)
- Load capacity up to 500 kg wheel load
- Length: 2088 mm / Width: 800 mm / Height: max. 21 mm / 3% slope

WCPS – the infrastructure for all challenges

Wireless Charging plateau solution

Whether industrial environment or ISO3 clean room – wherever a contactless loading zone for robots needs to be set up quickly and flexibly, the WCPS ramp system is a reliable loading solution.

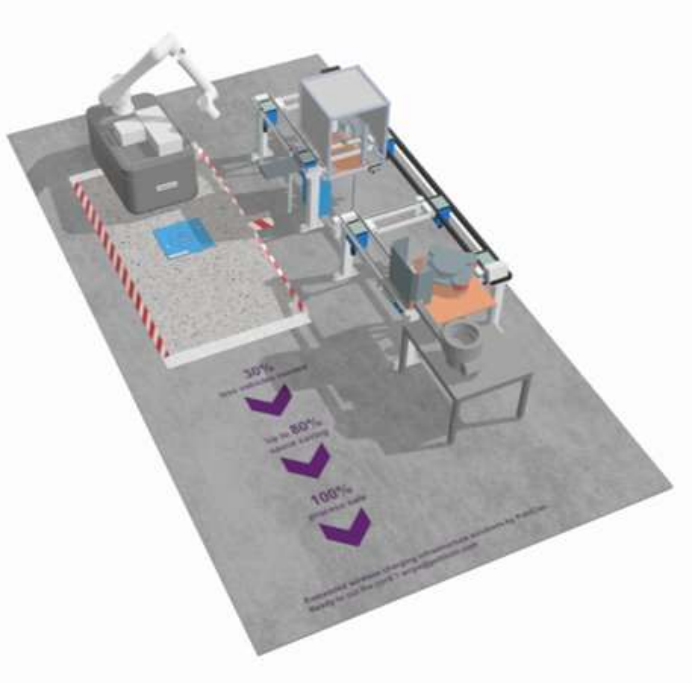


Current project

The production of semiconductor materials requires sensitive, smart and clean automation solutions. Especially for the safe handling of sensitive components, robot systems and the charging infrastructure must be perfectly coordinated.

With the WCPS ramp system, it has been possible to set up a harmonized and safe energy supply, which is subordinate to the work process of the robot.

The initial use of the WCPS ramp was at a large American semiconductor manufacturer and **enables contactless charging within the production zones** in highly demanding ISO3 clean rooms. During process-related stops along the semiconductor manufacturing line, the robot is reloaded contactlessly without having to leave the work process. This optimizes fleet utilization and minimizes non-value-added empty runs and traffic.



About

Wireless Charging ramp plateau solution

KUKA is an internationally active automation group with around 15,000 employees. The company is headquartered in Augsburg. As one of the world's leading suppliers of intelligent automation solutions, KUKA offers customers everything from a single source. From the robot to the cell to the fully automated system and its networking.

The robot used
KMR stands for KUKA Mobile Robotic. The KMR iiwa is a combination of the sensitive lightweight robot LBR iiwa and a mobile, flexible platform. As the name and the individual components already reveal, the KMR iiwa is characterized by high mobility and flexibility. Manufacturing processes are permanently changing. That is why mobile robot systems must be all the more adaptable. Maximum mobility and autonomous modes of operation optimize the production significantly.

The **PohlCon brand PUK** has been designing, developing and producing high-quality power supply solutions for over 50 years. The charging infrastructure for contactless charging of robots via the ground is their latest innovation. Here, energy provision is ensured robustly, efficiently, reliably and via the ground. WCPS thus supports the special requirements for automated electrification of robot fleets in modern production and logistics facilities.

In cooperation with **Wiferion** and using the efficient etaLINK 3000 charging technology, PohlCon offers a comprehensive ground charging solution for fleet operators, AGV manufacturers and automation planners, for which the process determines the charging location and not vice versa.