



SUCCESS STORY

Addverb boosts AGV uptime with Stäubli CombiTac

In the fast-paced world of modern warehouses, every second counts. For Addverb Technologies, a global leader in intralogistics automation, maximizing uptime is essential. Their advanced Automated Guided Vehicles (AGVs) and Autonomous Mobile Robots (AMRs) keep supply chains moving with precision, safety, and flexibility.

Reliable, high-speed charging for automated warehouse fleets

Built around a culture of engineering excellence, Addverb's compact and adaptable mobile systems are designed to keep pace with rapidly changing warehouse environments - from layout reconfigurations to throughput increases.

But as Addverb's footprint expanded across five continents, a critical question emerged: **How do you make charging faster, smarter, and more reliable without adding complexity to an already sophisticated fleet?**

Downtime during loading was a critical issue that could impact the entire operation and affect throughput and cost efficiency. Addverb needed a solution that could seamlessly integrate into their fleet management, which is scalable, reliable, and simple.

Charging downtime affects efficiency

Addverb's AGVs operate in dynamic environments where space is limited and workflows are tightly managed. The charging solution needed to have a compact design to preserve valuable

Industrial Connectors:

Modular connector CombiTac align 4

Application: Connector for warehouse applications

- Misalignment compensation with ± 4 mm radial and $\pm 2^\circ$ angular tolerance
- Two contacts capable of delivering up to 100 A
- Last Mate First Break (LMFB) technology

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space on the vehicles. It also had to provide high-current capacity to enable rapid charging cycles. Furthermore, the system required tolerance for misalignment to support autonomous docking without errors. Signal and data transmission were essential for real-time monitoring and control. Finally, the solution had to be durable enough to withstand thousands of mating cycles over the AGV's lifecycle.

Precision engineering meets operational simplicity

Stäubli delivered a solution that combined precision engineering with operational simplicity. At the heart of this approach was the CombiTac align 4 modular connector system, fully customized to meet Addverb's demanding requirements. Designed for high performance, the system featured two robust power contacts capable of delivering up to 100 A, enabling rapid and efficient charging cycles. Safety was built in through signal contacts equipped with Last Mate First Break (LMFB) technology, ensuring error-free connections every time.

To support autonomous docking, CombiTac align 4 features integrated misalignment compensation with ± 4 mm radial and $\pm 2^\circ$ angular tolerance, eliminating the need for an additional compensation device. This innovation significantly reduced integration complexity and preserved valuable space on the AGVs. Stäubli's MULTILAM contact technology ensures low resistance and high-quality contact throughout the product's lifecycle, even under demanding environmental conditions. Delivered pre-assembled, the components simplified integration and significantly reduced installation time, allowing Addverb to accelerate deployment without compromising reliability.

Results

The implementation led to shorter charging cycles, which increased AGV availability and improved overall throughput. Fleet coordination became simpler, reducing scheduling risks and operational complexity. The solution demonstrated zero issues in the field, proving its robustness under real-world conditions. Durable electrical contacts ensured reliable performance across thousands of cycles, minimizing maintenance needs. Ultimately, Addverb achieved a lower total cost of ownership, supporting its strategy for scalable growth.

The partnership between Addverb and Stäubli produced a charging solution that not only met technical targets but delivered measurable operational and strategic advantages. Together, Addverb and Stäubli demonstrated how precise engineering and collaborative design can create scalable, low-risk solutions for next-generation warehouse automation.

“Stäubli’s CombiTac connectors deliver the reliability and performance our AGVs demand. The charging consistency helps us maintain fleet uptime while simplifying operations-enabling us to deliver on our promise of building the warehouses of the future.”

Head of Product Engineering, Addverb Technologies

Customer benefits

- Modular connector fully customized for their high requirements
- Misalignment compensation for better docking
- Up to 100'000 mating cycles
- Easy handling and replacement

About Stäubli

Stäubli is a global mechatronics solution provider with three core activities: Connectors, Robotics and Textile. The international Group has a presence in 28 countries.

Stäubli Electrical Connectors is a specialist for advanced contact technology and technically mature solutions with a product portfolio ranging from miniature connectors up to high-power connectors for various industries.

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