

Delta Electronics Blazing a Trail for Wireless Charging

The growth in electric vehicles for passenger and commercial use is expected to be dramatic over the coming decade. Depending on where you live, more and more electric vehicles are passing you on the highway or driving beside you on city streets. What you may not be aware of is how many of today's factories, warehouses, and depots use rechargeable electric devices to move products, maintain inventory, and conduct business. And those electric devices are trailblazers in the use of wireless charging.

With customers using rechargeable devices throughout their operations, Delta Electronics started thinking about how to make their operations more efficient and cost-effective: they landed on improving current solutions by making them wireless. The result was a game changer for many of Delta's customers in how they manage their warehouses, conduct their daily business, and provide products and services to their customers.

WHY START WITH WIRELESS?

"To remain competitive, manufacturers are continually looking for ways to reduce costs while improving efficiencies," commented Alistair Coltart, Line of Business Head, Industrial Charging, Delta Electronics. "When we looked across all our business lines, we quickly realized that wireless charging could be transformative for many of our customers. And, working with WiTricity, we wanted to bring this innovative technology to them."

Delta realized that with wireless charging, its customers would no longer have to worry about electrical plugs for autonomous and semi-autonomous robotics. By moving to wireless charging—and away from conductive charging—there's less risk for sparks and a potential fire risk. In addition, no worn-out plugs, so less maintenance. And more importantly, wireless charging provides opportunity charging—or charging while also on the job—for autonomous robots, forklifts, and automated guide vehicles (AGVs). As operations become autonomous, Delta's customers are realizing they can maximize cash flow and move their operations toward renewable energy sources, which help to meet their sustainability objectives. Autonomous plants improve operations over time by running with a lower carbon footprint, as well as more safely and more profitably.

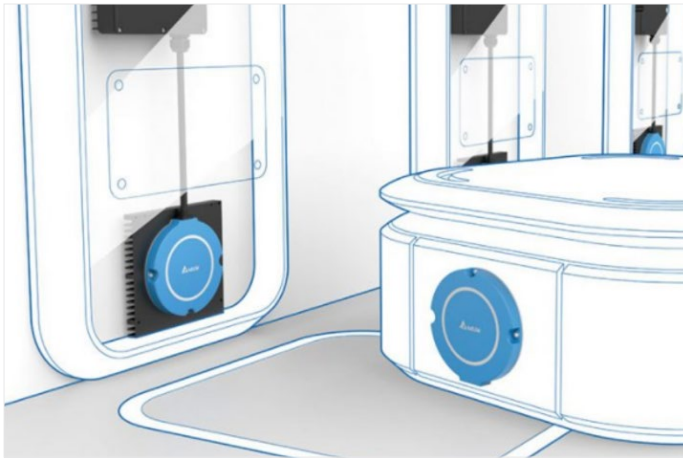


Founded in 1971, Delta is a global provider of power and thermal management solutions. As an energy-saving solutions provider with core competencies in power electronics and automation, Delta's business categories include Power Electronics, Automation, and Infrastructure. Delta's solutions serve global customers in various manufacturing and service industries such as automotive, telecom and IT, food and beverage, textiles, building systems, plastics and rubber, printing and packaging and machine tools.

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LINE OF BUSINESS HEAD,
INDUSTRIAL CHARGING



Autonomous AGVs can locate available charging stations and charge wirelessly, with no human intervention.

Deploying wireless chargers throughout factories and warehouses enables robots and vehicles to automatically charge while they are temporarily stationary. For example, materials handling robots can charge at loading/unloading stations or while they're idle in queues. Wireless charging also allows for complete automation since a human being is not needed to plug/unplug the robot, forklift, or AGVs, such as those currently used throughout the world.

WIRELESS CHARGING IN BUSINESSES WORLDWIDE

"The biggest impediment to implementation wasn't how to make wireless charging available to our customers," commented Coltart. "Rather, it was our customers' reaction to the idea of wireless charging. We had to allay people's fears of this new way of charging and prove that it's safe and efficient. Once we did that, our business exploded."

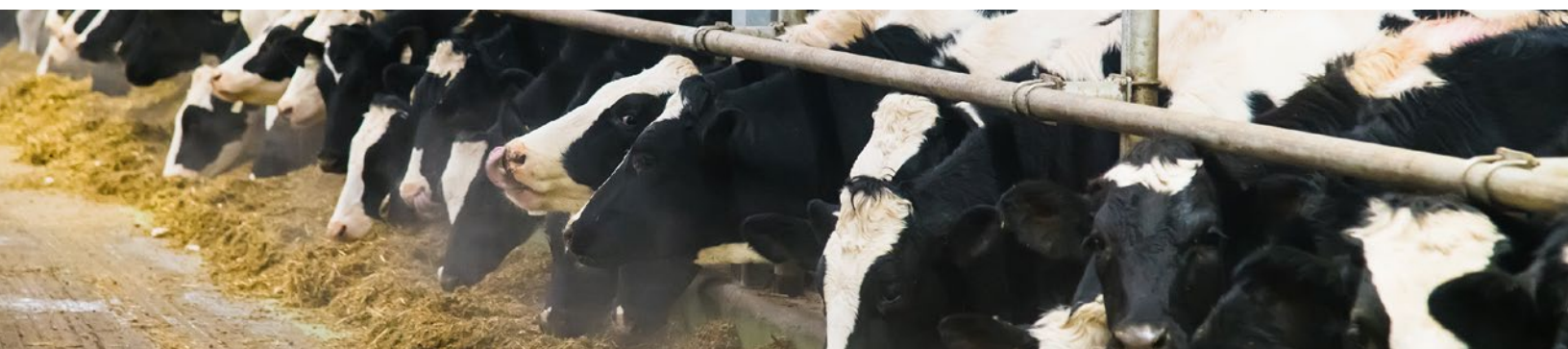
Examples of Delta's solutions (using WiTricity technology) in use today range from the quotidian to the unexpected.

In France, automated vehicles are moving throughout an airport, transporting luggage from check-in desk to airplane and from airplane to baggage carousel. They're also being used to move airplane drinks and food (remember when airplanes actually served food?) from kitchens to packaging to airplanes. Automated forklifts in UK industrial warehouses lift and move goods on pallets—saving time while also reducing injuries—and automated cleaning machines in US warehouses help ensure a safe environment for everyone.

But there are also the surprising uses, such as a fish farm cleaning robot that submerges to clean the nets that prevent the fish from escaping, then emerges to charge itself. Innovative room service "droids" deliver food and spirits to hotel guestrooms, saving money by eliminating the need to have a minibar in every room.

Coltart continued, "We started this journey from a very basic idea of who our customers are to a more inventive idea of how we can create automation and apply it to each customer's individual challenge. This opened a world of possibilities that are being implemented today."

Delta has found the world of possibilities is only limited by those considering how it might be used. For instance, the agricultural community is using wireless charging for barn cleaning and cow feeding robots, reducing the overall costs since they no longer have to worry about barn mice eating the charging cords. The medical community is excited to use wireless charging for mobile UV lamps for disinfecting hospitals, laboratories, and other medical environments. More important than ever during COVID, wireless charging reduces the need for humans to touch and interact with the charging apparatus, reducing the chance for infections.



ENABLING EFFICIENCY EVERYWHERE

“With the variety of environments that our customers work in, it was important that we created a solution that could work nearly everywhere,” Coltart continued. “Wireless charging is perfect for dirty and polluted environments and any process that involves charging a vehicle that a company wants to automate. In addition, it offers versatile charging for any battery type and can be easily integrated among 24V and 48V battery vehicles.”

As Delta—and its customers—has found, WiTricity’s wireless charging technology enables efficient, hands-free, and connector-free charging. With WiTricity technology, charging occurs automatically—without any human intervention or physical docking. As traditional electrical connectors for robotic docking stations can be failure prone and a safety hazard, wireless charging improves system reliability and safety. In addition, wireless charging stations can be deployed throughout a factory or warehouse, enabling opportunity charging as mobile systems move throughout a facility.

Opening company minds to the possibilities of wireless technology is the realization that it can be deployed in systems over a wide range of power levels, from a few hundred watts for small mobile robots, to tens of kilowatts for forklift trucks, to hundreds of kilowatts for heavy machinery.

It’s easy to see how wireless applications across the industries described demonstrate that reimagining workflows can lead to new and innovative ideas. WiTricity’s work in the EV space is also reimagining the way we refuel our vehicles—passenger vehicles, buses, last-mile delivery vans, and trucks. By unplugging the way we think about charging, we can rethink the way today’s drivers think about refueling their vehicles: just park and charge.



EFFICIENT



**AUTOMATIC
AND HANDS-FREE**



**NO WIRES TO FRAY
OR SPARK**

WiTricity has many resources to help you stay informed about wireless EV charging.

- Stay in-the-know by subscribing to our monthly **newsletter**: <https://witricity.com/newsletter>
- Check out our other **white papers**: <https://witricity.com/media/additional-resources>
- Watch **videos** that bring wireless EV charging to life: <https://witricity.com/media/videos>
- Read our **blog** with posts featuring keen insights and information on the hot topics surrounding wireless EV charging: <https://witricity.com/media/blog>

For more information about WiTricity’s wireless charging solutions, contact:
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ABOUT WITRICITY

WiTricity is the pioneer in wireless charging for electric vehicles, leading the development and implementation of magnetic resonance technology across passenger and commercial vehicles alike. The company’s products are backed by an extensive patent portfolio critical to ratified global EV wireless charging standards including SAE, ISO, and GB. Automakers and Tier 1 suppliers rely on WiTricity to help accelerate the adoption of EVs by eliminating the hassle of plug-in charging and setting the stage for future autonomy. Beyond EVs, WiTricity technology is indispensable to the wireless charging of all products, from consumer electronics to micro-mobility to robotics.