



# AN OVERNIGHT GAME-CHANGER— 60 YEARS IN THE MAKING.

## HOW ARISO CONTACTLESS CONNECTIVITY PROVIDES INNOVATIVE, NEW WAYS TO SOLVE CUSTOMERS' CONNECTIVITY CHALLENGES.

Over the past 60 years, TE's commitment to exceeding customer expectations has led us to adapt solutions and manufacturing processes across multiple industries, resulting in an entire portfolio of standardized as well as customer-tailored innovations. We've created products that overcome harsh environments where vibration or ocean depths dare to impede; solutions that adhere to sterilization and regulatory requirements where life and health are at stake; and technologies that take into account miniaturization and cost pressures inherent to consumer products manufacturing.

Finding new, often unexpected, ways to meet our customers' challenges has helped us become the world leader in connectivity solutions.



Vibration



Tilt



Through  
Materials



Safety



Rotation



Data Power  
Signal

### WE'VE GONE BEYOND THE SPEC.

Early on, we realized that in order to create groundbreaking solutions and invent superior products, we had to understand the application in context—including all of the business requirements. That's why we expanded our team of field engineers to support customers at their sites. These engineers regularly engage with customers to fully understand their needs and their pain points, and then participate in a collaborative dialog that's a catalyst for innovation.

This collaboration made it clear that our existing connector solutions could not fulfill every customer need. We had to investigate alternative technologies. Given our deep expertise with connectors and antennas, developing some type of contactless or wireless solution was a natural path to explore. Whatever the

outcome, the answer had to be as reliable as standard wired power and signal—but with wireless flexibility.

### WE KEPT ASKING OURSELVES, "WHAT'S POSSIBLE?"

We wanted a very reliable and affordable solution that would also be small enough to allow easy integration into customer applications. We studied and compared the attributes of various technologies that could transmit power and signal. Our criteria included size, cost, efficiency, and the ability to transmit over a certain distance. What about harsh and safety-critical environments? Could it transmit through water? Would it minimize or eliminate arcing? Should it penetrate metal? Would background noise interfere with transmission?



Inductive coupled power transfer emerged as the most viable technology since inductively coupled devices can transfer power and data across small distances, without any contact. The stationary pieces, such as a robot arm, could transfer power inductively to a rotating, indexing or fixed mobile part, like a gripper. The mobile part makes the power available to power sensors, heaters, cameras, valves, motors, microprocessors, or batteries while it also feeds the data back to the stationary piece. Another advantage of inductively coupled devices is their ability to operate reliably in very demanding environments—underwater, in vacuum chambers, ultra clean environments, surrounded by grease or mud, or on equipment that's spinning at high rpm. Because there are no moving parts to wear out, these devices are virtually maintenance-free—making this a very attractive technology for our client base.

### **NOW THE TRICKY PART: USING THE TECHNOLOGY TO MANUFACTURE A BEST-IN-CLASS PLATFORM.**

Once we had identified the technology, the objective was to integrate the power coils and near field antenna into a very small form factor—and then manufacture it. TE Connectivity has a tremendous breadth of expertise with both mechanical design and power electronics. Add to that our expertise in magnetics, RF and antennas. Plus, we have a global manufacturing capability to help us produce and deliver a best-in-class solution.

Our unique competencies led us to solve the potential problem of electromagnetic interference by using RF chips coupled with near field antennas. We were also able to reduce the total cost of the couplers by building a streamlined solution using fewer components, while improving performance and reliability.

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### **TIME TO DREAM.**

We invented the ARISO contactless connectivity platform in a very short timeframe, based on over sixty years of inductive coupling and mechanical expertise. The platform entails a fundamental change of direction for our customers—one that closes an important gap. Now they can implement our devices in applications where standard connectors and cables could not be used before. And it will enable an entirely new way of thinking about mechanically designed machines.

The Ariso contactless connectivity platform will undoubtedly lead to more innovation. One could envision, for example, a totally new, more sensitive robot that has complete freedom of movement. Our platform provides the building blocks that will allow our customers to dream about new products—and to create them.

### **WHERE WE ARE TODAY.**

We are now manufacturing evaluation kits for our customers, so they can test the hardware in their own environments—alongside our field engineers. Together, we can start to imagine what's possible in a world of contactless connectivity.

### **EXPERIENCE THE ARISO PLATFORM FOR YOURSELF. ORDER YOUR EVALUATION KIT TODAY.**

These evaluation kits give you the freedom to experiment with this technology in your own environment. Integrate TE's Contactless Connectivity technology into current, real-world scenarios of your own or share it with your customers. You never know what possibilities may develop with ARISO contactless connectivity at your fingertips. Contact us today at [ARISO@TE.com](mailto:ARISO@TE.com).

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