



**PRUSA  
RESEARCH**  
by JOSEF PRUSA

Country: Prague, Czech Republic Employees: 1,000+  
Industry: 3D printing industry Web: [www.prusa3d.com](http://www.prusa3d.com)

## CASE STUDY

# Prusa Research Scales 3D Printing Simplicity and Quality with Molex Connectors

Proven Connectivity Solutions Drive Seamless 3D Printing Experiences  
for Growing Community of Diverse Customers Worldwide

## CHALLENGES

- Innovative 3D printer manufacturer of machines sold as fully assembled and kit versions needed robust, easy-to-use connectors for SMT-line and home-based assembly.
- Adherence to open-source hardware and software required proven connectivity solutions that supported existing and new printer models for seamless upgrades.
- Favorable pricing and ample supply chain availability was necessary to help accelerate mass production and keep pace with rapid customer adoption of various printer models.

## SOLUTION

- Arrow Electronics introduced Molex, thanks to a complete list of connectors that balanced functionality and simplicity without compromising quality.
- Molex CLIK-Mate connectors chosen for special features, such as a locking mechanism to facilitate automatic board placement without tools or special skills.
- Over 16 types of CLIK-Mate connectors are used, along with Micro-Fit connectors and RF microwave solutions. FFC/FPC and custom connectors being explored for new printers.

## BENEFITS

- More than one million parts populated on Prusa printers in 2024 using CLIK-Mate connectors with excellent performance.
- More than 20 printer designs utilize Molex connectivity solutions, which makes it easy to replace parts, as well as upgrade and customize printer functionality.
- Molex's service and support differentiates the company from its competition while helping Prusa fuel rapid growth of more than 25% year over year.

**In the fast-paced world of 3D printing, Prusa Research stands out for its ability to excite and delight customers of all kinds, thanks to its innovative 3D printers and flexible sales model. Every printer across the company's award-winning product portfolio can be purchased as a fully assembled printer or a do-it-yourself (DIY) printer kit.**

"We want to give customers the most seamless experience possible," explains Josef Prusa, CEO of Prusa Research. "It's a balancing act because we have to ensure top quality without boxing anyone in so they can easily modify how their machine operates."

By making 3D-printing technology more accessible and enjoyable, Prusa has accrued a vast and devoted customer base, ranging from home hobbyists, students and small businesses to large industrial companies that rely on Prusa to develop game-changing products. Based in the Czech Republic city of Prague, Prusa Research has built a solid reputation for creating printers that embody open-source firmware to streamline modifications, add-ons and upgrades.

## EVOLUTION OF EXCELLENCE

Founded in 2012 by Josef Prusa, the company evolved from humble beginnings ignited by his passion for making cost-effective, foolproof 3D printers. In doing so, he embraced open-source hardware and software principles espoused by the RepRap project, a British University initiative that leverages open-source technology to make 3D printers capable of producing their own parts.

His strong belief in open, community-based collaboration served as the impetus for Prusa's early efforts, leading to the production of full-featured yet simple-to-use printers. Rapid adoption by customers across a variety of industries and skill levels, along with Prusa's highly regarded role as a customer advocate and industry evangelist, put Prusa Research on the world stage.

"This company is literally changing the world," says Rudolf Krcmar, CMO of Prusa Research. "Our mission to make the best quality offerings is leading to a new application almost every day, which is really exciting."

Prusa currently employs more than 1,000 people across three continents, processing over 300,000 orders in 2024 for Prusa printers, filaments, resins and accessories. Last year, the company also opened a U.S. subsidiary called Printed Solid, in Newark, Del., to further expand its global reach while manufacturing popular printers and filaments in the U.S.

True to its roots, this 3D printing rising star leverages a large 3D printer farm to produce plastic parts for its own printers while offering rapid prototyping capabilities to myriad others.

Customers can access Prusa's growing community database, called Printables, to download thousands of official 3D-printable files. "Our customer focus, passion for community and open-source nature continue to drive incredible growth," adds Prusa. "In 2024, Prusa grew 25% year over year, and we are excited for this year, which will be even bigger."

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*Rudolf Krcmar  
CMO, Prusa Research*

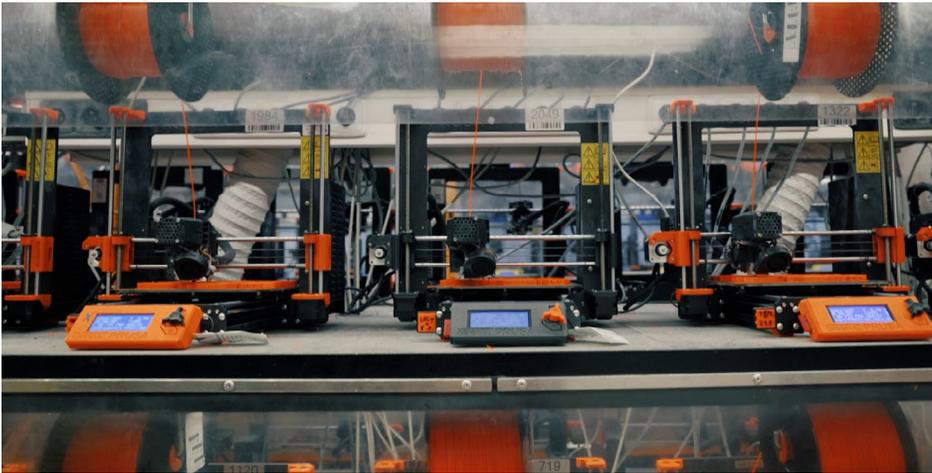
## COLLABORATION IS KEY

Prusa's unwavering commitment to community and collaboration extends to relationships with top-tier technology providers and distributors. As evidence, Prusa enlisted Arrow Electronics, a global provider of technology products and services, for assistance in finding top-quality connectivity solutions.

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*Josef Prusa  
CEO, Prusa Research*





The primary goal was balancing functionality and simplicity without compromising quality. “We were introduced to Prusa by our distribution partner, Arrow Electronics,” recalls Karel Belzik, Molex Sales Manager for Eastern Europe. “Prusa was looking for connector systems that were robust and easy to use.”

Optimizing machine builds and operation were major considerations for Prusa’s engineers. “We provide our printers in both fully assembled and kit versions,” says Simon Kuzica, Engineer at Prusa Research. “It’s important that our on-board connectors are reliable while offering the simplest set-up for customers at home.”

Additionally, the company needed to ensure its connectors would perform flawlessly under harsh conditions, including exposure to extreme temperatures and vibration. To that end, Molex’s CLIK-Mate wire-to-board connector system emerged as the most viable solution because it met Prusa’s high standards for both strong performance and straightforward operation. Ideal for devices that require connectors capable of carrying more signal lines in less space, these connectors feature a unique tuning-fork style contact design that provides low-insertion force while maintaining secure electrical contact.

This capability was attractive because it lets customers connect and disconnect Prusa printer modules without any tools or special skills. “We were looking for connectors with good build quality that customers would not be able to put in the wrong orientation,” adds Martin Wolker, Hardware Developer at Prusa Research.

CLIK-Mate’s design features an innovative locking mechanism that provides immediate confirmation when a connection is secure. This design also facilitates automatic board placement, along with drop-in replacement to competitive connectors.

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*Simon Kuzica  
Engineer, Prusa Research*

After testing product samples, Prusa Research reviewed favorable pricing and supply chain availability, which enabled Arrow to expedite deliveries for mass printer production. Almost immediately, Prusa realized the many benefits of this versatile connector

for pre-assembled printers and printer kits. “We need high-quality components to achieve the reliability of our products and Molex provides that to us,” says Kuzica.

### **THE ‘PERFECT CLICK’**

According to Michal Prusa, Josef’s brother and a Hardware Designer for Prusa Research, the Molex brand evokes a strong reputation for reliability. “When people see a genuine product, it makes them feel safe,” says Michal. “When you connect CLIK-Mate, it makes an audible click, and that just feels very good.”

The sound of simplicity and quality was met with enthusiasm by Prusa’s experienced engineers working on the company’s surface mount technology (SMT) assembly line, as well as home hobbyists who assembled their own printers. Up to 16 different types of CLIK-Mate connectors are used to streamline production of both pre-assembled printers, as well as those sold as kits.

“We populated over one million parts using Molex CLIK-Mate connectors last year and they all have performed very well,” recalls Kuzica. “We now have more than 20 designs, and they all use Molex connectors.”

CLIK-Mate connectors are especially beneficial for customers building their own printers from Prusa-supplied kits. “It is really nice to have this feature, especially for users who are not as experienced in putting together a printer,” Wolker notes. “It also makes it easy to replace parts, which is important because we want to support our products for a long time.”

One of the biggest strengths of Prusa’s wide product portfolio is the ability to offer diverse choices, such as the new CORE One printer, which hit the market this past January. This fully enclosed, CoreXY 3D printer is a precise, high-speed, versatile machine for both demanding and

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Hardware Developer, Prusa Research*

novice users. “We try to make our printers as affordable as possible,” adds Krcmar. “To accomplish this, we enable customers to unlock new capabilities through software and hardware upgrades, so their original printer grows with them.”

### **RAPID GROWTH TRAJECTORY**

As part of its ongoing bid to transform the world of 3D printing, Prusa continues to balance rapid growth with an unwavering commitment to quality and simplicity. Seamless upgrades empower customers to extend their 3D-printing capabilities without having to buy an entirely new model. Molex’s proven, high-quality connectors play a major role in supporting both existing and new printer models.

In addition to Molex CLIK-Mate connectors, Prusa’s printers take advantage of Molex Micro-Fit Connectors, which are compact, high-performance interconnects blending power and flexibility without compromising space or reliability. Molex’s ultra-microcoaxial RF

connectors are used for connecting Bluetooth and Wi-Fi connectors while Prusa continues to explore Molex’s latest solutions for supporting high-speed data and RF microwave technology.

Engineers from Prusa, Arrow Electronics and Molex meet regularly to discuss new product roadmaps and emerging customer requirements, as well as the ongoing role of Molex’s existing, new and custom connectors to accelerate the company’s global expansion while retaining an intimate customer-first focus. The team also is evaluating Molex’s Easy-On FFC/FPC Connectors, which are ideal for high-power applications and volume production as well as support for robotic mating and automated SMT assembly processes.

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As Prusa continues at the forefront of 3D-printing innovations, Molex and Arrow will play crucial roles in the company’s growth trajectory. “We must maintain a level of consistency across each next-generation printer to streamline upgrades,” comments Michal Prusa. “We will reach out to Arrow and Molex for consultation and confirm what is possible.”

Sustainability is another big imperative, which Prusa reinforces by the company’s commitment to upgrades and replacement parts. “We work closely with Prusa engineers to review emerging product designs and align them with new connector types as well as ensure compatibility for simple upgrades,” says Molex’s Belzik. “The service and support we provide Prusa is what differentiates Molex from the competition.”

Prusa Research maintains a positive outlook by remaining steadfast to scaling quickly and decisively. “We are very excited about the immediate future,” Josef Prusa concludes. “Continuing to expand in Europe while building out manufacturing capabilities in the U.S. is important. Not only does this give us ‘Made in the U.S.’ status, but this expansion will enable us to better support local markets while growing globally to develop and deliver final products as close to customers as possible.”

### **ABOUT PRUSA RESEARCH**

Prusa Research revolutionizes 3D printing by making innovative, open-source technology accessible worldwide. Founded in Prague, Czech Republic, Prusa has grown from a one-man start-up to a globally recognized brand with 1,000+ employees. The company advances 3D printing with cutting-edge printers, software, and materials, catering to markets like education, industry, and home hobbyists. For more information, visit [www.prusa3d.com](http://www.prusa3d.com).

### **ABOUT MOLEX**

Molex makes a connected world possible by enabling technology that transforms the future and improves lives. With a presence in more than 38 countries, Molex offers a full range of connectivity products, services and solutions for markets that include data communications, medical, industrial, automotive and consumer electronics. Through trusted customer and industry relationships, unrivaled engineering expertise, and product quality and reliability, Molex realizes the infinite potential of *Creating Connections for Life*. For more information, visit [www.molex.com](http://www.molex.com).

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