

Keeping Consumer Payment Solutions Secure Using Materials Expertise



To meet industry, consumer, and regulatory demand, Ingenico designed a PIN pad shroud for payment terminals.

As payment solutions have become simpler, security considerations have grown increasingly complex. Ingenico is a worldwide leader in payment solutions for a wide range of industries including healthcare, hospitality, large retail, merchant, fuel, retail banking, vending, and more. To meet industry, consumer, and regulatory demand, Ingenico was looking for a PIN pad privacy shroud for payment terminals already in the field, already manufactured but not installed, as well as terminals not yet manufactured and assembled. They turned to a materials partner for help in creating a solution that could be securely fastened to their payment terminals.

25 Years Providing Expert Payment Solutions

To remain a leader in payment solutions, Ingenico delivers the perfect combination of ease-of-use and secure, high performance. Their reputation is built on delivering consumer friendly, secure, and innovative payment solutions that can keep up with global changes in the world of electronic commerce. Trends in the industry are moving “beyond payment” to offer a range of compelling new services at the point of sale.

Ingenico is the number one player in the secure electronic payments market with over 15 million terminals deployed across 125 countries. Cost reduction, auto-installation and update, always-on connectivity, security and compliance, customization, and control are all key factors in meeting their customers’ requirements. None is more important than security.

Ingenico optimizes security from the ground up. Their terminal offerings conform to the highest worldwide security standards and regulations as well as to the consumer’s demand for more privacy and security. Ingenico’s electronic payment products incorporate a 32-bit processing architecture that delivers fast processing of powerful cryptographic algorithms. Products support RSA, DES, and 3DES encryption standards to ensure data integrity. By developing a privacy shroud for their PIN pad terminals, Ingenico was offering merchants and consumers an additional security measure to reduce fraud and identity theft.

**Bonding, Joining
& Sealing**



3M™ VHB™ tape's acrylic chemistry provides excellent bonding strength and durability.

Anyone who has ever used a PIN pad terminal with a long line of other customers has thought about how easy it is to watch a person enter their PIN number. This is known as “shoulder surfing.” This direct observation of the number a person enters on a PIN pad is one of the most common methods for illegally capturing a PIN. In addition, there are reported cases where people with access to security cameras have been able to pick up PIN numbers – an occurrence that seems to happen with some frequency at fuel pumps.

Ingenico's engineers designed a privacy shroud that could be retrofitted to existing payment terminal. While they had a good design for the privacy shroud, they needed a partner with materials and adhesives expertise to help them securely adhere it.

Selecting the Right Converter and Adhesives

To ensure that the privacy shroud can stand up to the use and abuse of consumer and merchant handling, Ingenico was looking for a materials partner who could explore and identify the best alternatives for affixing the privacy shroud. With its expertise in materials and adhesives, Fabrico and its parent company, EIS, were the perfect partners.

Ingenico's design for the privacy shroud required the right materials and adhesives solution.

Investigating adhesives that had high bonding strength with plastic led Fabrico to 3M™ VHB™ 5925. 3M™ VHB™ tapes are used for many interior and exterior bonding applications. As a modified acrylic foam tape, the tape is viscoelastic – the foam has energy absorbing and stress relaxing properties. The acrylic chemistry provides excellent durability performance and bonds to medium to low surface energy plastics.

The tape provides the highest level of conformability while maintaining high internal strength. It is available in 0.025" (0.64 mm) thickness with a tolerance of +/- 15%. Peel adhesion is 17 lb./in. width; dynamic shear is 90 lb./in.; and static shear at 72°F (22°C) is 1500 g/0.5 sq. in. (holds 10,000 min). The effective temperature range is -31°F to 194°F (-35°C to 90°C), which makes it suitable for use in an outdoor environment.

For the privacy shroud application, Fabrico selected this double coated, pressure-sensitive, closed cell construction tape for its high performance characteristics, appearance, moisture and chemical resistance, and overall durability. Since the first application was retrofitting existing models, it was also chosen for ease of use.



More than 100,000 privacy shrouds were delivered over several months.

Once the appropriate adhesive materials were selected, Fabrico die-cut the 3M™ VHB™ tape to fit the bottom of the privacy shroud. Fabrico made a left and right pair that was easily attached in the field by removing the liner. It quickly adhered to the bottom of the shroud and could then be adhered to the terminal.

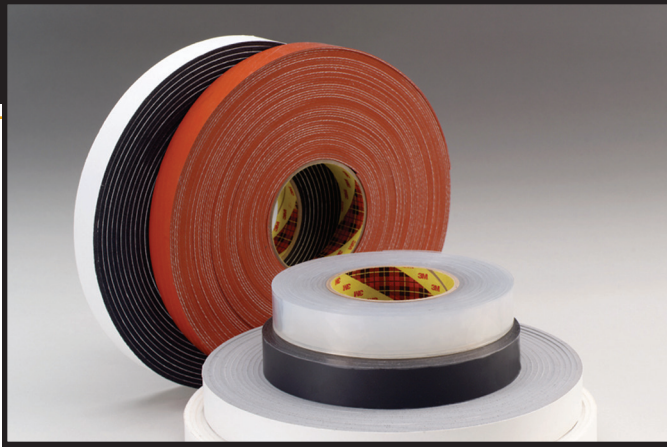
Fabrico's die-cutting experience and expertise is wide ranging. Fabrico cuts foam- and film-based adhesives. An extensive array of precision die-cutting capabilities include high-speed punch presses, flatbed presses, servo-driven rotary die-cutting, CNC die-cutting, and water jet die-cutting. Laser die-cutting is well-suited for very small features and intricate designs on a broad range of flexible materials including laminates, tapes, films, papers, foams, rubber, and coated fabrics.

Water jet cutting uses an ultra high-powered jet stream to cut through a multitude of materials. The water stream is pressurized at 60,000 psi. The narrow kerf and tight nesting prevents any excess waste materials.

By working with Fabrico, Ingenico was able to deploy a solution that met customer privacy concerns.

Over several months, Fabrico delivered over 100,000 sets (pairs) for use in the field. The tool was then re-designed to allow for maximum efficiency as a multiple-up die that ran across the web. This allowed Fabrico to reduce the cost for future runs.

By working with Fabrico, Ingenico was able to quickly deploy a solution that met consumer demands for privacy, while allowing merchants to quickly add that solution to existing equipment. In addition, with the redesigned tool, Ingenico was able to produce the privacy shroud cost-effectively for new product manufacturing.



3M™ VHB™ tapes are used for many interior and exterior applications where strong, tough bonds are required.

As payment solutions have become simpler, security has grown increasingly complex.

Material Partners

Fabrico has strategic relationships with world-class materials suppliers, such as 3M, to assist its customers in selecting the best material for the intended use and to expedite materials sourcing. Whether adhesive films or liquids, all critical material properties are considered in any Fabrico project, including chemical, thermal, and moisture resistance.

With more than 30 years of materials experience, Fabrico engineers also understand the impact of a material selection on the overall manufacturing process, and design material systems that optimize production efficiency and improve overall cost-effectiveness.



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