Product Redesign for Harsh Application Testing Device

iConn Systems developed a combination of overmold technologies to create synergy and produce a rubust design for a fire detection manufacturer.

Background

Fire detection system manufacturers rely on system checking equipment to troubleshoot and verify that the overall system is responsive and operational. We were approached by a customer that prototyped a testing device and was looking for a company to manufacture it. They were not completely happy with their prototype design as it was too large for a toolbox, let alone someone's pocket. They wanted one handed operation, and the current design required two. The prototype tester was hard-wired, difficult to operate, and contributed to misinformation. This customer needed a company that could improve upon the design to make the device more accurate, compact, user friendly, and reduce cost as well.

The Challenge

The main challenge of redesigning the testing device was to provide an integrated package that included a rocker switch, an electrical connector to plug into the system, a detection resistor and informative labeling. Overmolding of a commercially available rocker switch was the largest challenge and the key in making this a successful design

The Approach

iCONN System's approach was to use two different overmolding technologies together to create a synergy and produce a robust design for the fire detection system.

1. Utilize **High Pressure TPU Overmolding** techniques for the connector to create a durable and environmentally resistant connection point for the assembly.

2. Utilize **Low Pressure PA Overmolding** techniques for the rocker switch and resistor to protect the integrity of electronic components and to not inhibit the mechanical operation of the rocker switch.

Why it Works

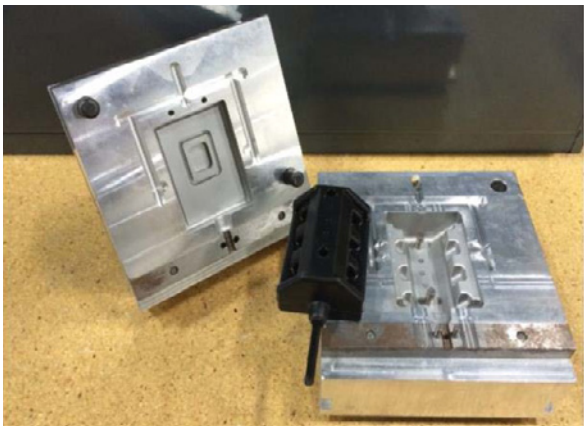
This solution included the design and development of an extremely compact size product, approximately 75% smaller relative to conventional methods.

iCONN System's Custom Design

Conventional System

The design also allowed for additional features that were integrated into the shape of the overmold. Specifically, molded barriers that protect the rocker switch mechanism from impact damage and a recessed area to contain and protect the information label from field abuse and inadvertent removal. These are the types of synergies that iCONN looks for when designing overmolds for all applications.

The progressive overmolding techniques and engineered designs utilized within the development of the fire detection system resulted in a new product category for iCONN Systems that can benefit the entire industry. These engineering advancements created a benchmark for future designs in which electronics and electro-mechanical components like rocker switches can be integrated into harsh industrial applications successfully and reliably using iCONN's overmolding technologies.



iCONN System's Custom Overmold Tool

Another Satisfied Customer

The customer was pleased with the redesign of their prototype. iCONN System's engineers were able to take our customer's concept and improve upon the design to improve accuracy, size, and functionality, all while reducing overall cost.

iCONN System's design engineers actively pursue new ways of applying various types of overmold processes, techniques and materials to develop new products that reduce costs and out-perform traditionally assembled products.

About iCONN...

Founded in 2006, iCONN Systems, LLC designs and manufactures electrical and electronic connectors, overmolded and discrete cable assemblies and value added turnkey products serving global markets for a variety of applications including those requiring environmental and EMI/RFI shielding considerations. Our management team has extensive connector/cable assembly experience, in excess of 100 years, to the benefit of our customers.

For More Information Contact iConn Systems, LLC today at 630-827-6000

www.iconnsystems.com