



CASE STUDY

Bulgin Switches Stand Up to the Cold in Top-End Appliances



Engineers at a legendary appliance manufacturer leave no detail unnoticed.

An existing door switch was giving their premium-quality refrigerator performance issues. The internal spring had a tendency to stick at low temperatures.

With limited time to make design adjustments before factory production, the team looked to Bulgin for a better solution.

The engineers liked the tight actuator tolerances and reliable performance of a current Bulgin product, which had a stronger internal spring and a more generous clearance between the rocker and housing. This made the switch more cold-tolerant. The challenge was they also required a switch approved to the ATEX EN60079-15 standard for use in potentially explosive environments. They inquired if Bulgin would be willing to help.

They requested 25,000 of a similar, but customized switch—with gold-plated contacts. And it needed to pass EU certification to the ATEX standard in a few months. Could Bulgin do it? Bulgin engineers said they could.

An Accelerated Timeline

Preparations had already been underway at Bulgin to gain ATEX certification on the very same series of switches. ATEX is the EU equipment certification to prevent

triggering of gas leaks and similar ambient hazards. The refrigerator used R-290 refrigerant, a flammable gas, so was bound by these regulations.

To assist its client, Bulgin accelerated the timeline to ATEX compliance a quarter earlier than planned.

The second request was to change the switch design to incorporate gold-plated contacts as opposed to silver-plated contacts. Because the door switch circuit would only be using a low voltage, the client wanted gold contacts for stable current flow and long-term reliability.

This new version of the switch—and its fast-tracked certification application—was done specifically for the project.

Bulgin's engineering team was able to achieve ATEX certification on the first try without issue, which is not a given in the industry, where failure to pass tests can result in delays of months to years of rework.

Prompt certification kept the project on track, allowing the client to meet its production timeline and maintain its reputation as the leader in high-performance appliances.

And the customer may have done Bulgin a favor. Now that it is known that Bulgin's [3100](#) and the [3140](#) series comply with ATEX and hold up to the cold, it has found several other customers with refrigeration applications.





bulgin

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