Crisis-resistant

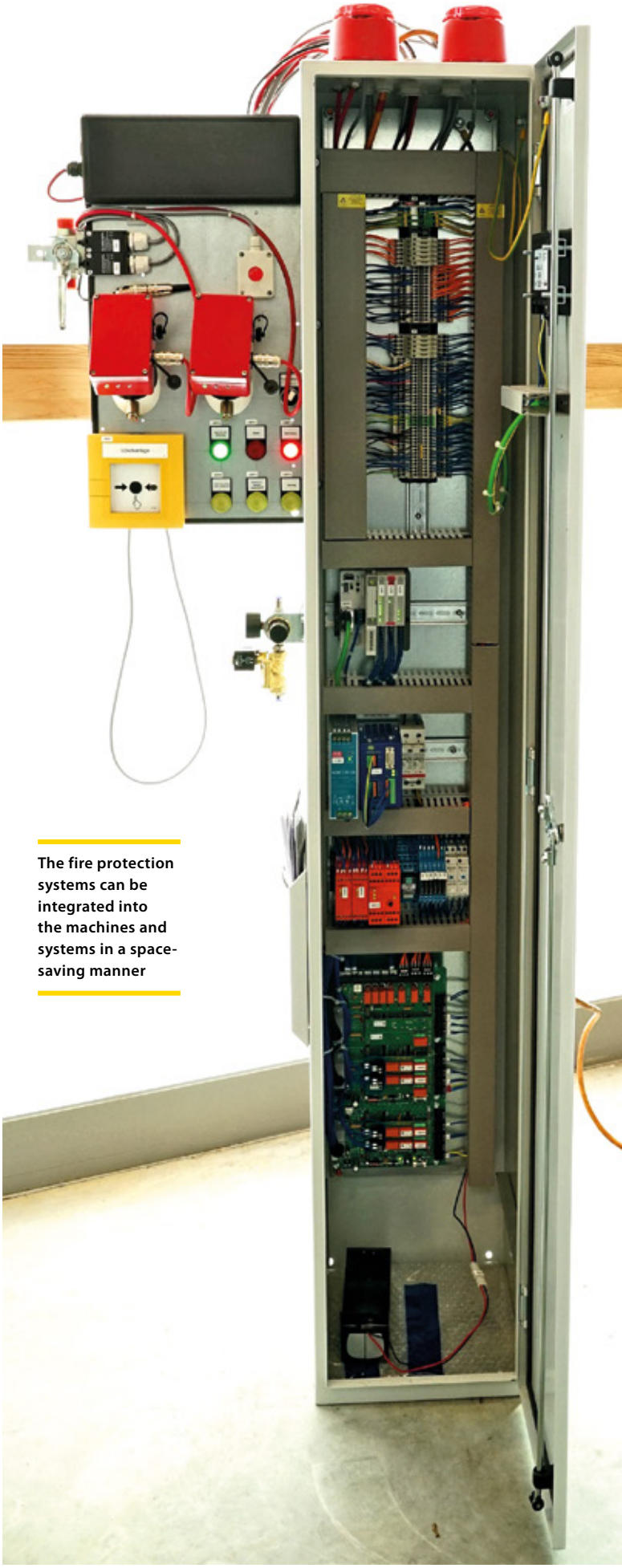
With two alternative CODESYS control solutions including program porting, TURCK and Turck Mechatec strengthen the crisis resilience of STS Brandschutzsysteme

Over the past five years, many companies have had to test their crisis resilience more often than they would have liked. Starting with COVID-19 and the resulting damage to supply chains, through to the gas shortage and the resulting sharp rise in energy costs in 2022, to the looming customs conflicts. But how can crisis resilience be built when no one knows what the next crisis will be? If there is one piece of advice that can be gleaned from the multiple crises, it is to never rely on the status quo and the current solution.

STS Brandschutzsysteme GmbH, based in Friolzheim, Germany, had to learn this lesson when its supplier of HMI controllers virtually stopped deliveries for months. STS Brandschutzsysteme specializes in the planning, delivery, installation, and maintenance of customized fire protection systems for industrial machines and equipment. The solutions offered include fire extinguishing systems for filter and extraction systems, machines, wet paint and powder coating systems.

Standards separate machine and building fire protection

As in many other industrial and economic sectors, standards and regulations structure the business.



The fire protection systems can be integrated into the machines and systems in a space-saving manner

QUICK READ

When STS Brandschutzsysteme GmbH came under pressure due to supply bottlenecks for its HMI controllers, quick help was needed. The solution: flexible compact controllers from TURCK with CODESYS – programmable independently of the manufacturer and combinable in a modular fashion. With support from in-house engineering service provider Turck Mechatec, the existing control program was ported in no time at all – including the user interface. This enabled STS to remain delivery-capable while building resilience through the manufacturer-independent control solution. The example shows how partnership-based cooperation and technological openness create crisis resilience.

The market for building fire protection systems may logically be directly adjacent to STS's fire protection systems. However, different standards apply in the field of building fire protection than in the machine and plant engineering sector ( ) – which is why STS does not offer systems for building fire protection. STS Brandschutzsysteme focuses on its market and its customers. The company has long-standing partnerships with many of them and has built up relationships of trust at many levels. They understand and rely on each other – especially in times of crisis.

Structure of STS fire protection systems

Fire protection systems from STS typically consist of the following core components: sensors, more specifically UV or IR detectors for fire detection, and in some cases also temperature and smoke detectors. The signals from the sensors are evaluated by a control system, which initiates extinguishing or shutdown in an emergency. At STS, extinguishing is usually carried out by means of CO_2 injection or a flame barrier is created using CO_2 or a mechanical barrier. Communication between sensors, actuators, and controls is carried out exclusively via hardware contacts – without protocols.

At that time, STS used only compact HMIs with integrated PLCs from a well-known manufacturer as the central control system for its fire protection systems. The controllers control the fire protection systems, visualize the most important information, and serve as a control panel for retrieving diagnostic data, acknowledging faults, or activating maintenance mode.

Component shortage puts STS Brandschutz under pressure

When electronic components became difficult to obtain in 2021, STS was also unable to use its control systems with the usual delivery performance. Managing partner Reinhard Deseife and his team had to come up with something. The company purchases control systems and other electronic equipment from electrical and automation technology wholesaler Emil Löffelhardt. Reinhard Deseife's first call in search of an alternative control solution therefore went to Uwe Binder, head of the automation technology department at Löffelhardt. "We had to find a solution quickly because we are the central supplier for many OEMs. Some of our customers have been working with us for over 30 years and count on us. The fire protection system is a must-have in many plants. If we can't deliver, the production line basically comes to a standstill," says Managing Director Deseife, recalling the pressure to act at the time.

Interim solution quickly sold out

It's like at the supermarket checkout: when a new checkout opens and too many customers respond to the call, you can quickly find yourself waiting longer at the new checkout. It was a similar situation for STS Brandschutz and Emil Löffelhardt. The first alternative solution with a compact control system from another manufacturer, which Löffelhardt suggested, did not last long. Although STS had delivered several hundred systems with the alternative control system, many other manufacturers behaved in a similar manner, and stocks of the alternative control system quickly ran out.

Crisis-proof alternative solution sought

Now an alternative was needed that offered greater crisis resilience through fallback options. "We wanted to build redundancy for the future so that we wouldn't end up in such a situation again," explains Reinhard Deseife. Uwe Binder and his colleagues therefore recommended TURCK's compact controllers to STS. These are very flexible in use, and with a CODESYS controller, STS would be manufacturer-independent.

Two control solutions with CODESYS

TURCK put together two alternative solutions for STS: one with HMI and BL20 I/O system with integrated control, and alternatively a solution in which the control is integrated in the HMI and a BL20 with pure I/O function is connected. The appeal of these solutions is that if there are delivery problems with one component, the alternative combination of HMI and I/O system can still be selected. And if things get really tight, STS could also run its CODESYS program on controllers from other manufacturers.

Turck Mechatec ports control program under time pressure

There was one hurdle to overcome on the way to this setup, as Markus Gutsch, Head of Technical Internal

»We are very satisfied with the solution, especially the quick implementation of the programming from the original system to CODESYS, which was extremely important to us. We are an OEM supplier. Our customers rely on our delivery capability and cannot quickly find another supplier.«

Reinhard Deseife | STS Brandschutz GmbH

»The programming code of the product we had been using was very different from that in CODESYS and the HMIs. Of course, we would have managed it at some point, but not in the time frame we needed – we needed a solution quickly.«

Markus Gutsch | STS Brandschutz GmbH

Sales, recalls. "The programming code of the product we had been using up to that point was very different from that in CODESYS and the HMIs. Of course, we would have managed it eventually, but not in the time frame we had – we needed a solution quickly." TURCK was able to offer a solution for this challenge as well: With the support of TURCK's engineering service provider Mechatec, TURCK and, in this case, wholesaler Emil Löffelhardt were able to offer the porting of the control program from the old system to the CODESYS control environment. This was possible because Turck Mechatec has decades of experience with CODESYS and has experienced programmers on its team who have seen countless PLC systems.

The Mechatec specialists worked closely with Markus Gutsch and his colleagues and were thus able to present a solution very quickly. The implementation of the graphical user interface also went smoothly. The customer will probably hardly notice any difference between the fire protection systems with the old control system and those with TURCK HMI. STS Brandschutzsysteme now uses both control systems and, of course, tries to supply customers with the same type.

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Settings or maintenance routines can be carried out via the touch display of the TURCK HMI

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The visualization level of the control program was ported by Turck Mechatec to the TX107

As a rule, TURCK's BL20 is active in the control cabinet as a controller. Alternatively, STS can also use a BL20 as a pure I/O level for another controller