Safety upgrade of tape production line

Client: Adhesives manufacturer

Industry: Fast-moving consumer goods

Location: Swansea, Wales

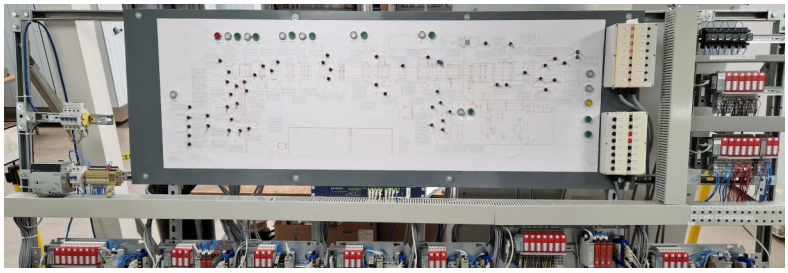
Challenges:

- Upgrade legacy hardwired safety
- Replace obsolete equipment
- Certify to modern safety standards

Solutions:

- GuardLink technology: minimise install, improve maintainability
- GuardPoint IO: where hardwired devices still required
- GuardLogix safety controller

ACTEMIUM Automation Nottingham



Background

The site produces various products for the personal care industry, the collision aftermarket, and vehicle repair centres. This project focused on the production line for tape used on disposable nappies. The entire line was being transferred to another site.

Challenges

- Upgrade the existing legacy hardwired safety systems to a state-of-the-art safety system.
- Design of a new systems architecture.
- Upgrade safety devices and improve the general safety of the machine.
- Minimise wiring to machine cells and provide improved diagnostics and zoning capabilities.

Solution

The solution we developed used GuardLink technology from Rockwell Automation. Guardmaster® smart safety devices that feature GuardLink technology deliver information, advanced functionality and flexibility. This technology helps enhance safety and increase efficiency. GuardLink technology-enabled devices offer advanced features and diagnostics the benefits of which include: real time, contextual diagnostics and sensor health data; Automatic Device Reset (ADR); and, seamless integration into Rockwell Automation EtherNet/IP™ architecture.

Our scope covered: the design, validation and verification of the safety systems upgrade; electrical design of new control panels and modifications to existing panels, including all drawings and schedules; electrical installation of the safety systems; controls implementation for safety-related systems; HMI changes; production of test documentation and safety validation packs; and, commissioning of the system prior to shipment.

Results

We completed the project within a tight timescale, which required close co-operation and integration of our engineering team and the customer's site-based team. To facilitate parallel work streams, we developed a full test rig to allow extended testing at our facility whilst continuing installation activity at the customer site. This minimised commissioning time on site and also provided training opportunities as part of the test phase.

Twenty zones were implemented with in excess of 35 safety-related control functions. We provided a full SISTEMA report, and the system was validated to BS EN 13849-2:2012 requirements .