

Automation solutions from Festo – for potentially explosive areas

FESTO



For the expansion of its production facilities in a potentially explosive area (ATEX zone 1 and 2), a manufacturer of alcoholic mouthwash relied on Festo as the equipment supplier. As a result, Festo designed, pre-assembled and delivered the pneumatic hygienic butterfly valve assemblies, the associated pneumatic control system, and the input modules for processing electrical signals – all fully tested.

At the heart of the production plant are the mixers that are used to mix the various types of mouthwash; pipelines link each one of these mixers to its respective raw materials tank. Stainless steel hygienic butterfly valves VZFA control the raw materials as they pass through the pipelines. The parts of the valves that come into contact with media can be used safely with food products. Each hygienic butterfly valves is operated by a quarter turn actuator DAPS, while sensor boxes DAPZ take on the task of position feedback. The valves, sensor boxes and sensors on the tank are installed in ATEX zone 1.

A valve terminal combination CPX/MPA connects the field components to the plant's control system. The pneumatic part MPA supplies the quarter turn actuators DAPZ with the compressed air they need. Meanwhile, the individual valve slices are controlled by an internal bus so there is no need for the pilot valves to have any external wiring.

The electrical automation module CPX-P processes the feedback signals from the process sensors and sensor box for the valves on the mixer and surrounding pipelines. The intrinsically safe input signals are processed directly by the input module in accordance with NAMUR, without the need for additional isolating barriers. Thanks to integrated barriers in the CPX-P, the automation module is able to process input signals from both ATEX and non-ATEX zones in a single module. An Ethernet interface integrated into the CPX-P establishes the connection to the higher-order controller. The entire valve terminal CPX/MPA has been installed in a control cabinet in ATEX zone 2.

Here are the reasons why the customer opted for Festo:

- Engineering and delivery of a complete, harmonised package
- Design and delivery of assembled and tested hygienic butterfly valves
- Design and delivery of assembled and tested valve terminals with integrated remote I/Os and Ethernet interface, fully pre-assembled for installation in a control cabinet
- Better process reliability thanks to continuous interface management and an additional diagnostic function in the valve terminal
- Reduced hardware costs and less time and expense required for installation thanks to lack of isolating barriers

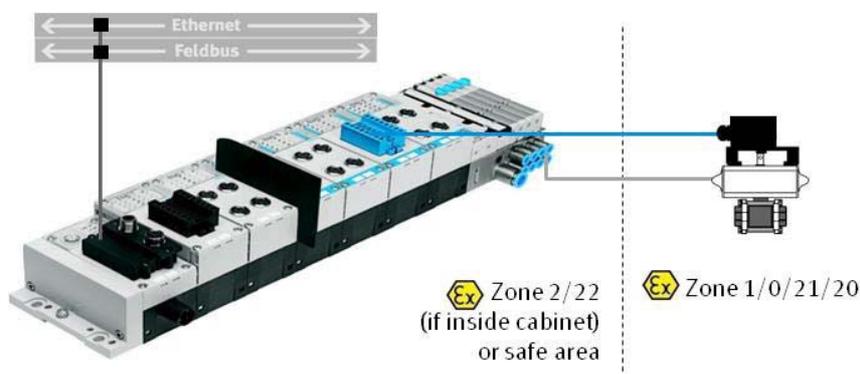


Fig. 1: CPX-P with integrated barrier for simultaneous processing of electrical signals from zones 0, 1, 20, 21 as well as 2 and 22.

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