Smart Switch Box for Pneumatic Actuators According to Industry 4.0 Concept

Pneumatic actuator is automatic control device for opening and closing of rotary valves with compressed air. Pneumatic actuators are divided into two groups as single and double acting. The single acting actuators make the opening process with compressed air and the closing process with the spring force. Double acting actuators do both the opening and closing operation with compressed air.

The switch boxes are products that indicate the position of the valves controlled by the pneumatic actuators. Intelligent control boxes are the devices that can perform the control and status monitoring as well as the position of the actuators.

In some valves used in industrial applications, safety is significant. It is also important to control the actuators where the valves control is important. The need for smart switch box is for the detection of faults occurring in the actuators immediately and before the malfunction occurred. Smart Switch Box (SSB) is a smart device which provides control of pneumatic actuators, provides status monitoring, functionality test and provides information from sensors and offers maintenance without malfunction.

Smart switch box

SSB generally;

• Monitor the state of the actuators instantly.

• Controls the actuator.

• Saves energy.

• Measures and show the temperature value of the actuator.

• Indicates the number of times the actuator has been switched on and off after the first day.

• Indicates a fault condition.

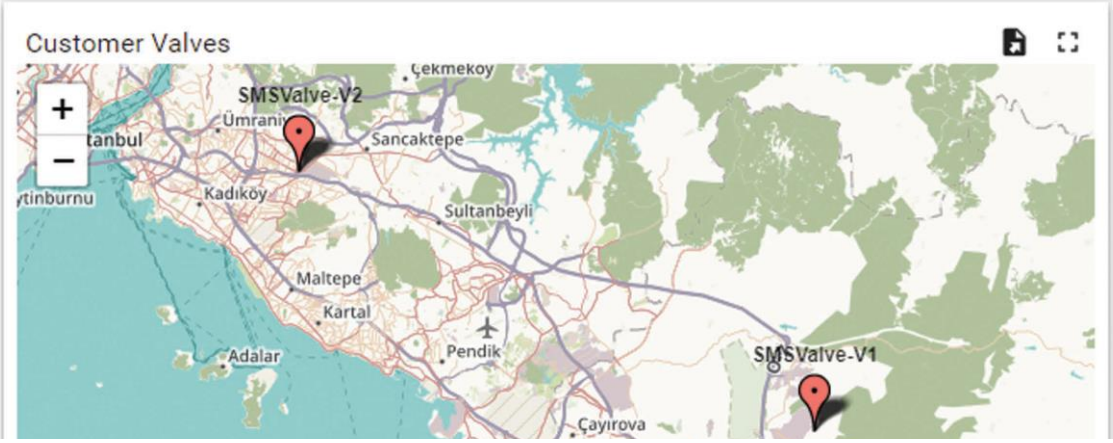
• By analyzing the data, it informs about the malfunctions that may occur and ensures the maintenance without failing.

Thanks to the SSB, the actuator can be controlled manually via the web and automatically via the device or via the control signal.

It is designed to perform partial control test (PST) for functional control. This test is a method used for testing the safety of the actuator which are used for safety purposes and which cannot be shut down under normal conditions but are only closed in case of emergency. In PST test, fault conditions are determined by analyzing the pressures of the actuator, temperature, opening and closing times or an early maintenance warning is given by calculating the possibility of failure.

After reaching the desired position, the actuator controls the coils of the namur solenoid valve to cut off energy and save energy. Although the coil cuts off the energy, the valve's position guarantees protection.

SSB can be viewed and controlled over the web. You need to login with the username and password via the link https://cloud.inovatink.com/login for web control. By monitoring over web, get controlled and creating fault warnings, it can also be viewed as a product within the internet of things concept.



The smart switch box (SSB) is controlled manually with the 4 buttons on it and the necessary settings can be made. By the LEDs on the top of the screen, the visual information is also given. In the monitoring screen, the identification information of the actuator, the status of being connected to the internet, counter information, port A and B air pressure values, on / off time, status information and temperature value can be monitored instantaneously.

All R&D studies of the TORK smart switch box have been made entirely in our company. It has been produced in accordance with the Industry 4.0 concept for safe systems, which is one of the needs of our industry. A more useful and practical product design was achieved by avoiding more costly and dangerous failures by sending an early maintenance warning. In addition, the product range of our company increased, more value-added products were put into production.