Process Digitalization in Explosion Hazard Zones Made Easy

How processes are networked within the value stream is central to additional value creation. The combination of explosion-proof smartphones, tablets and mobile interfaces helps to easily and purposefully utilize Industry 4.0 data obtained from them. This allows processes to be optimized, maintenance activities to be planned in advance and asset management to be designed efficiently.

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▪ Pictures: Softing Industrial Automation GmbH, Shutterstock.com

The efficient management of critical business assets, the proactive planning of maintenance activities and thus the minimization of downtime at minimum cost are essential for plant operators and manufacturing companies: Digital, mobile and networked solutions are therefore required to determine what data from plant, machine and field devices should be easily accessible and serve as a human-machine interface for intuitive, predictive operation of complex systems.

The challenge

In modern production environments, many different field devices record process data - from temperature sensors to pressure, level and flow meters. Technicians, experts and maintenance personnel must be involved in this constant flow of information. Depending on the task, the data is transferred via several communication protocols such as HART, FOUNDATION Fieldbus or PROFIBUS PA. Interfaces for each process automation protocol are therefore required for configuration, to commission the individual field devices and to read status data. This increases investment costs and makes data collection and analysis unnecessarily complicated and inefficient.

The solution

The Pepperl+Fuchs brand ecom, with its interlocking, explosion-proof hardware and software portfolio for the mobile worker, offers an integrated solution for an efficient enterprise mobility concept that includes smartphones, tablets, peripherals and applications. With Pepperl+Fuchs as the umbrella brand, users can benefit from a consistent and future-proof solution and service portfolio for explosion hazard zones that offers completely new possibilities along the entire supply chain in line with Industry 4.0. With the Enterprise Mobility solution, data is permanently available across the entire process chain - at any location and at any time. This complete solution is complemented by the mobile interface „mobiLink" by Softing Industrial Automation GmbH, a specialist for digital data exchange in industrial production environments. Thanks to mobile fieldbus access and acyclic read and write access to all parameters of a field device, the multiprotocol mobile interface mobiLink can read the various communication protocols used in a plant in one device. It provides a single interface compatible with the major process automation protocols HART Master, Foundation Fieldbus Host and Profibus PA Master. In addition, mobiLink can be temporarily connected to fieldbus segments and HART current loops, enabling individual communication with field

devices. In this way, the user only has to use one device for diagnosis, condition monitoring, parameterization and configuration of the process data and saves corresponding investment costs. In addition, this significantly simplifies the commissioning and maintenance of field devices. The ATEX-certified mobile interface is suitable for use in potentially explosive zones due to its explosion risk approval for Zone 1, its robust design and the option to connect to intrinsically safe circuits. In addition to a USB interface for benchmark host operations, Bluetooth interface and battery operations allow mobile hosts such as tablets and smartphones to be used in explosion hazard environments.

The advantages

With the interaction of smartphone, tablet, mobile interface and professional applications, technicians or experts on site can comprehensively monitor and control production and subsequent processes, as they are always integrated into the data flow and have easy access to it. Mobile solutions make business processes transparent and enable them to be monitored from mobile devices. At the same time, the current status of an order is also immediately visible to the worker. In this way, he can report material consumption to the system and trigger an order via the supply chain in real time. Such an interconnected, compatible solution portfolio of mobile devices and interfaces contributes to more flexibility and helps to increase employee productivity:

- With intrinsically safe, mobile solutions from ecom, information on assets across the entire process chain is permanently available in real time.
- People, processes and systems are thus networked as required for Industry 4.0. This enables a company not only to improve its productivity, but also to keep its employees safe and to open up new fields of application.
- Thanks to mobile fieldbus access, the mobile mobiLink interface by Softing Industrial Automation allows various process automation protocols to be read on a single device - even in explosion hazard zones via Bluetooth connection.
- mobiLink can be easily integrated into common engineering tools using the FDT frame application. It can be configured quickly and easily via FDT/DTM or software for network configuration and device parameterization of FF networks.

Conclusion

An optimal organization, planning and control of plants and plant components is essential in the process industry. The essential prerequisite for this is a cross-system exchange of production and plant data. For such a data exchange to be realized, sensors, devices, controls and production systems must be digitally networked horizontally and vertically. Modern field devices are complex systems that provide a multitude of information in addition to the actual process value, e.g. trends, past value sequences and diagnostic data. For their intended use, these devices require the setting of a large number of parameters.

mobilink – Suitable for connection to intrinsically safe circuits

In conjunction with explosion-proof tablets and smartphones by ecom, mobiLink by Softing Industrial Automation offers maximum flexibility in device setup and in recording and reading production data. With the aid of mobile fieldbus access, the most important automation protocols can be read in a device and transferred to the smartphone or tablet via Bluetooth and the corresponding applications. The highlight of the all-in-one solution for explosion hazard zones is that these data now converge directly - for example on a mobile dashboard. Based on this, experts can act proactively instead of reactively, regardless of location, identify trends and make data-supported forecasts. In short: They can make better decisions and ensure more intelligent processes that can be better planned and controlled.

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Softing Industrial specializes in implementing digital data exchange and improving data communication in industrial automation applications. Its range includes hardware and software products as well as tailor-made solutions for smooth communication at OT level (field level/operating technologies) and for simple data exchange with the IT level (information technologies). Softing Industrial's products and solutions are geared towards the increasing demand for integrated and secure data communication. They are functionally superior, easy to use and enable the optimization of industrial value-added processes and the increase in efficiency of machines and plants. Further information is available at https://industrial.softing.com