Basis for industrial analytics
Modular measurement, monitoring and automation

The Big Data environment is being shaped by Industry 4.0 with industrial measurement technology functioning as an interface between virtual worlds (where production processes are automatically planned and simulated) and real worlds (where everything must run according to plan). Modular measuring devices support users on the path to the smart factory by recording measurement data quickly and precisely, and intelligently pre-processing and monitoring it.

Today's measurement technology forms a bridge between Industry 4.0 and Big Data. With the ProfiMessage D device from Delphin Technology, measurement data is recorded quickly – the basis for intelligently processing the data. Designed as a modular measuring, control and monitoring device, ProfiMessage D can be used as an IT module in a smart factory thereby opening up a multitude of possibilities. It represents an intelligent and sustainable method to positively influence production process quality. Making production more efficient requires high-precision recording and analysis of measurement data. Using ProfiMessage D is a step towards industrial analytics by enabling process monitoring and test bench automation. The devices demonstrate their power wherever measured data needs to be acquired quickly, precisely and under galvanic isolation, and then intelligently pre-processed and monitored. They enable applications to be installed on machines, systems and test benches in a practical and understandable way, aided by OPC UA which permits data sharing between every system within a company, irrespective of operating systems, busses, protocols and drivers.

Ideal for low- and multi-channel applications

ProfiMessage D uses a master/slave concept and has a range of I/O modules to meet the requirements of any system. The device's inputs and outputs are differential, precise and galvanically isolated from each other as well as from the power supply. The system architecture prevents earth loop distortions and enables measurement of non-isolated signals. The range of interfaces in the ProfiMessage D device enables users to communicate with external systems using a PLC, a frequency inverter or an intelligent field device. Interface usage and data sharing are easy to understand. A display and jog wheel is used to make important network settings such as IP addresses and network masks. Furthermore, pre-defined measurement values can be permanently displayed. Depending on the I/O module being used, each input can be individually configured to measure mV, mA, RTD and thermocouples. Universal use of the inputs for voltage, current or temperature measurements makes the device particularly flexible.

Processing large amounts of data

ProfiMessage D devices are configured using the "Configurator" software. Furthermore, the ProfiSignal software offers a diverse range of field bus interfaces. A master device is equipped with one Profinet and two Profibus DP salve interfaces (redundant according to PNO 2.212 V1.2), a Modbus TCP and a Modbus RTU, as well as a freely configurable CAN interface. The interfaces can also be used to connect serial measurement equipment via RS232/485 ports. Measurement date can be recorded reliably and conveniently using software designed for both small and large numbers of channels. Various alarm and monitoring functions are also available. Even large volumes of data can be processed via interfaces and drivers. Three scalable software packages are also available to ensure easy acquisition of any measured data. With the new ProfiSignal-Web add-on, visualisation and analysis of the measurement data can be performed on any device, anywhere. Mobile on-

site access to measurement and characteristic data at test benches or production units saves time because it avoids the need to sit at a Windows PC in an office or control room. Remote monitoring of machines and plants also increasingly requires access that is platform and location independent. The client–server software ProfiSignal Web is available as a state-of-the-art solution for such requirements. It enables processes to be visualised and controlled using individually created dashboards, and for measurement data to be analysed. Client software installation is unnecessary. All that is required is a standard internet browser. The ProfiSignal Web server can be installed either on a PC or directly in the ProfiMessage D master device. Monitoring and automation tasks are performed using software channels. Software channels are predefined function modules which users set up and configure at the click of a mouse and which function within the device. Limit value channels monitor measured data and activate alarms or issue emails. The number of software channels is practically unlimited. All functions are independently processed by a powerful internal processor and ensure fully secure operation of the ProfiMessage D device.

Also for remote monitoring

ProfiMessage-D device applications range from monitoring industrial processes, systems and clean rooms through to laboratory data acquisition and test bench automation. In addition to data acquisition, core tasks include intercommunication and integration into the respective infrastructure via cable or wireless operation. For test bench tasks with rotating machines, users can use ProfiMessage-D devices in combination with Expert Vibration or Expert Transient devices to acquire vibration data and process measurement values together. ProfiMessage D devices can also be used fully independently to remotely monitor systems, ships, vehicles or other types of decentralised equipment.

Measuring device features

- Acquisition, signal pre-processing and independent storage of measurement data
- Monitoring functions using limit values and alarms
- Universal analog inputs with high measurement precision
- Galvanic isolation between channels
- Simple and intuitive configuration and operation
- Ethernet interface for online operation
- USB interface for data memory read out
- Profinet, ModBus, CAN-Bus and serial interfaces
- Two Profibus interfaces
(single or redundant, according to PNO 2.212 V1.2)
- Optional WLAN interface
- Compact and modular design
- OPC UA client/server interface for horizontal sharing of measurement data
- Combined vibration and process data