

WE LEARN FROM YOU EVERY DAY –
AND THINK OUTSIDE THE BOX.

Digital process control – modular and flexible

The platform for intelligent networking: EDIP

When it comes to dealing with liquids and gases, Bürkert has become a sought-after partner all over the world. Why? Probably because we have been learning for and from our customers for more than 70 years now. This enables us to always think that crucial step ahead and around the bend.

For your added value. Let us prove it to you – we look forward to your challenge.



We make ideas flow.

bürkert
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LEADING THE WAY TO INTELLIGENT NETWORKING

After the worldwide establishment of mechanical production equipment, followed by mass production and process automation, the term “Industry 4.0” stands for a comprehensive digital alignment of industrial processes. With the introduction of the new device platform EDIP – Efficient Device Integration Platform – Bürkert opens the door to intelligent networking of its products. EDIP facilitates the integration of field devices in an existing system, all the way to the sensor and actuator level. In an industrial environment EDIP makes possible what users are already familiar with in their daily lives through smartphones or tablets: EDIP lets the user monitor and control complex processes by means of user-friendly and intuitive touch controls.



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EDIP is the new device platform for intelligent networking of industrial processes.

6 Your added value

Learn how you will benefit from EDIP.

10 Interview

Find answers to your questions about EDIP.

12 Your solution

We present our latest products and innovations.

14 From the field

We show you how our customer was able to boost system efficiency and quality with digital networking.

INTRODUCING ... EDIP – THE FLEXIBLE SOLUTION FOR EFFICIENT PROCESSES

powered by
EDIP

EDIP stands for the new device platform that standardises the operation, communication and interfaces of process devices. The platform consists of three pillars:

Communication

The spinal cord and connecting link of EDIP is a digital interface that is based on the CANopen industrial standard: the Bürkert system bus. This concept requires no master. All networked devices have equal rights and addresses are allocated automatically. The message recipient (consumer) monitors the information provider (producer) and reports an error if the information is not delivered.

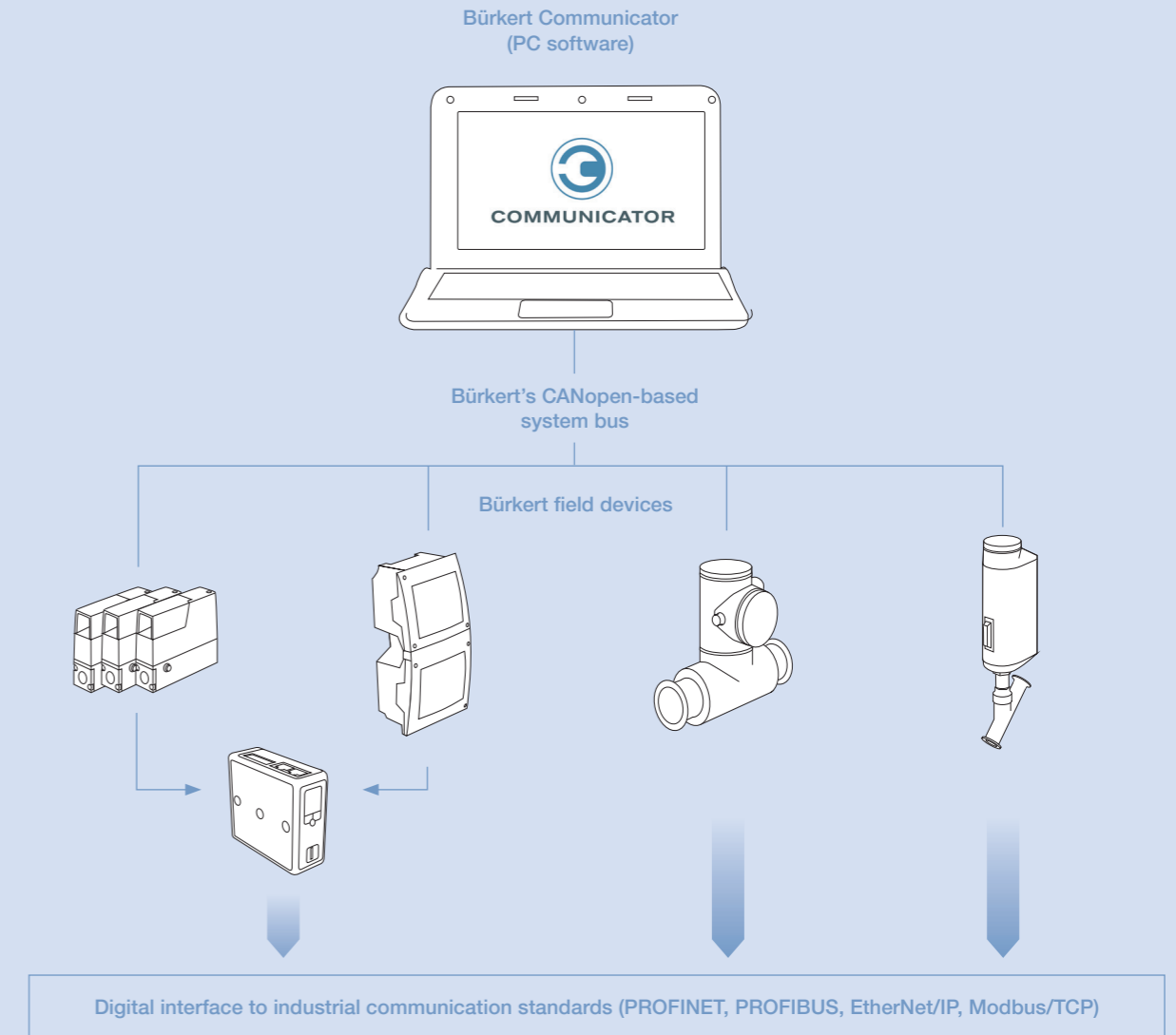
Software

Another important module of EDIP is the configuration software “Bürkert Communicator”. The software is used for the configuration, parametrisation, diagnosis and servicing of all new Bürkert products. In addition to the basic function of configuration/parametrisation,

the software also features a graph view for displaying process values. Settings can be saved, modified, printed and transferred to other devices. The graphical programming interface makes it possible to implement virtually unlimited functions and to control customised processes. Access to the network is possible during operation and users also have the option to connect several devices simultaneously.

Hardware

EDIP can be used to implement different modular hardware systems. The device platform is therefore ideal for both compact and modular field devices. Customers can combine the modules for their individual requirements. An example is the SCU (System Control Unit). Depending on the application requirements, this unit can be expanded to include additional I/O modules for the integration of any number of sensors and actuators.





Intelligent networking of your processes – including an intuitive, user-friendly interface.

WE CREATED A PLATFORM THAT OFFERS YOU UNLIMITED POSSIBILITIES



Standardised interfaces for convenient device integration. Communication between the EDIP devices takes place via a digital interface, the Bürkert system bus. This bus is based on the CANopen industrial standard and is fully compatible with it. It also features additional functions for simplified operation. The fieldbus coupler allows integration of Bürkert field devices in other industrial standards, such as PROFINET, EtherNet/IP, Modbus TCP or PROFIBUS.



Graphical programming for individual process steps. The graphical programming environment makes it possible to control application-specific steps in a process sequentially. For example, decentralised control loops can be implemented or monitored individually. It is no longer necessary to access the superior control system. This local programming solution boosts system efficiency and saves time and money compared to a centralised solution.



ONE tool for commissioning, diagnosis and service. The Communicator is a software for the parametrisation and configuration of process devices. It also features monitoring and diagnostic capabilities. The Communicator displays all connected devices at a glance. Faults are displayed as soon as they occur, allowing diagnosis of the affected device. In addition, the software features a convenient firmware update function.



Reduced parametrisation for fast and easy start-up. All devices in an EDIP network communicate with equal rights. Addresses are allocated automatically. This saves time and reduces efforts during start-up and minimises parametrisation significantly. If a device fails, the parameters can easily be transferred by exchanging the storage medium.



Individual and flexible for short delivery times. The platform is designed according to a modular principle. The modules can be combined freely for individual requirements. This simplifies not only development and production, but also logistics. Customised versions can therefore be implemented quickly.



Intuitive user interface for easy and convenient operation. A standardised user interface simplifies the control of all EDIP devices. Intuitive touchscreens, menus and device drivers facilitate control and minimise input times. The consistent display and control concept with a standardised structure and visualisation reduces the time needed to learn to use the system and minimises errors.

A CONSISTENT DIGITAL DEVICE PLATFORM

Ms Mungee, where did the idea for EDIP come from?

The idea ultimately came from our customers. We kept receiving inquiries on customised and specific solutions. As a solution, we developed a modular device platform for our devices that can easily be adapted to many different requirements. The versatile concept makes it possible to integrate additional functions and new technologies, which allows us to respond even more quickly to customer requirements. Despite the high level of complexity and individuality, the devices are still easy for the user to operate.

Is EDIP compatible with systems of other manufacturers?

Yes, of course. The integration of EDIP devices is possible via the common industrial standards, such as PROFINET, PROFIBUS, EtherNet/IP or Modbus TCP. All actuators and sensors with digital and analogue signals can be integrated in the network by means of I/O modules.

What are the most important features of EDIP?

With EDIP we aim to provide our customers with a standardised device platform with an intuitive control concept. It is important to note that the platform is not a proprietary solution. The Bürkert system bus is fully compatible with CANopen, but also offers additional functions. The users do not need to familiarise themselves with a new standard. Instead, they are able to integrate EDIP devices in an existing process.

And which data does the network transmit?

In general, measurement and process data, of course. But the data flow is not only cyclic. For example, the system also reports diagnostic data if there are deviations in process data from defined parameters. In this manner, part of the maintenance and error handling is automated.

Doesn't that make EDIP in fact an open system?

Yes, and that was planned from the beginning. Our focus has always been on versatility and modularity. EDIP can easily be integrated in the digitalised industrial processes of our customers. Moving forward we also aspire to continue developing the platform, in order to adapt it to the changing market requirements.



Nandini Mungee,
Product Manager Industrial Communication
at Bürkert Fluid Control Systems

POWERED BY EDIP

All future Bürkert field devices will be EDIP-based. Even today, the platform already offers numerous modules to make the intelligent networking simpler.



Online Analysis System:
Modular system with a 7" touchscreen for monitoring the most important drinking water parameters at a glance.



Electromotive process control valve for use in demanding applications in systems without compressed air.



Fieldbus coupler: A multi-protocol module for integration of Bürkert field devices in industrial communication standards.



FLOWave: Innovative flow meter with no sensor elements in the measuring tube for hygienic applications.



Compact mass flow controller/meter for precise gas control.



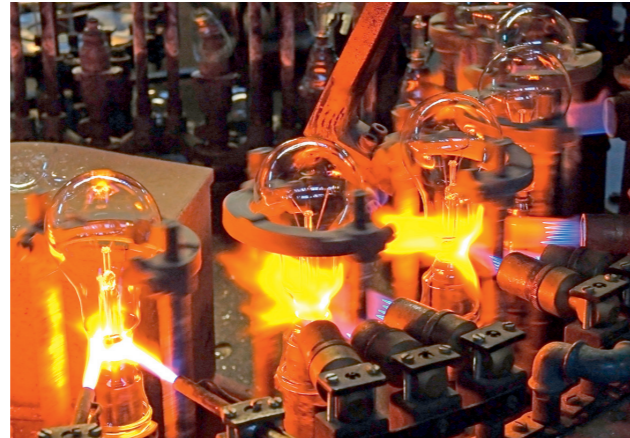
AirLINE: Valve island for the reliable control of process valves.

YOUR ADVANTAGES AT A GLANCE

- Standardised control and display concept
- Fast and easy start-up
- Digital interface for access to detailed device diagnosis
- Quick and simple transfer of parameters to a new device via exchange of the storage medium
- Fast and reliable addition of new measurement functions
- Extensive options for connection to higher level controllers
- "Communicator" software tool for convenient programming of new functions via graphic user interface

QUALITY AND SYSTEM EFFICIENCY AT THE PUSH OF A BUTTON

In the manufacture of high-quality glass products, fluctuations in quality cannot be tolerated, but they are a recurring problem. This results in high reject rates due to faulty production. In cooperation with the customer, Bürkert has therefore developed a solution that combines intelligent mass flow controllers with EDIP.



The application

The shaping of the end products is one of the most complex tasks in industrial glass production. The process involves heating a glass body with a gas burner and then shaping it to the desired form. The gas supply is adjusted for the particular end product by means of automated control systems. Precise control of the gas quantity is crucial for ensuring glass of high quality.

The challenge

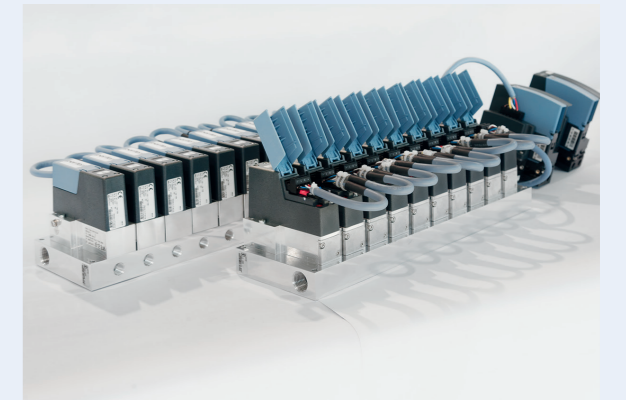
Our customer manufactures forming machines for the production of pharmaceutical glass. For many years the company has been using Bürkert solenoid valves to control the gas supply to the burners. The gas flow rate is regulated by rotameters and manual needle valves as

actuators. However, this standardised process is highly sensitive to changing pressure or temperature conditions. That affects the flame properties of the burner and therefore the shape of the glass. The result: fluctuating quality, which is evident for example in varying glass thickness.

The solution

The use of Bürkert mass flow controllers (MFC) made it possible to minimise quality fluctuations, since the MFCs compensate for interfering factors. In each machine, 50 to 100 MFCs provide for precise flow control. They are integrated in the higher level control system with only 2 to 4 pre-configured field bus couplers. The field bus couplers can easily be adapted to the PLC used by the customer. Optionally, it is possible to integrate additional

pressure sensors and shut-off valves by means of I/O modules. Compared to the original process, MFCs are compact and offer maximum precision. Due to the high level of automation, changes in the process can easily be carried out by means of the higher level controller, at the push of a button and without specialised knowledge – which saves time and money.



Bürkert mass flow controller with field bus coupler

AT A GLANCE

- Fast start-up due to minimal configuration and parametrisation
- Process reliability due to real-time access to process and diagnostic data
- Process stability due to precise measurements regardless of pressure and temperature fluctuations
- Increased productivity due to short downtimes as devices can be exchanged easily
- More flexibility, since new formulations can be configured using the Communicator software and adapted at the push of a button