



Sensors, transmitters and controllers

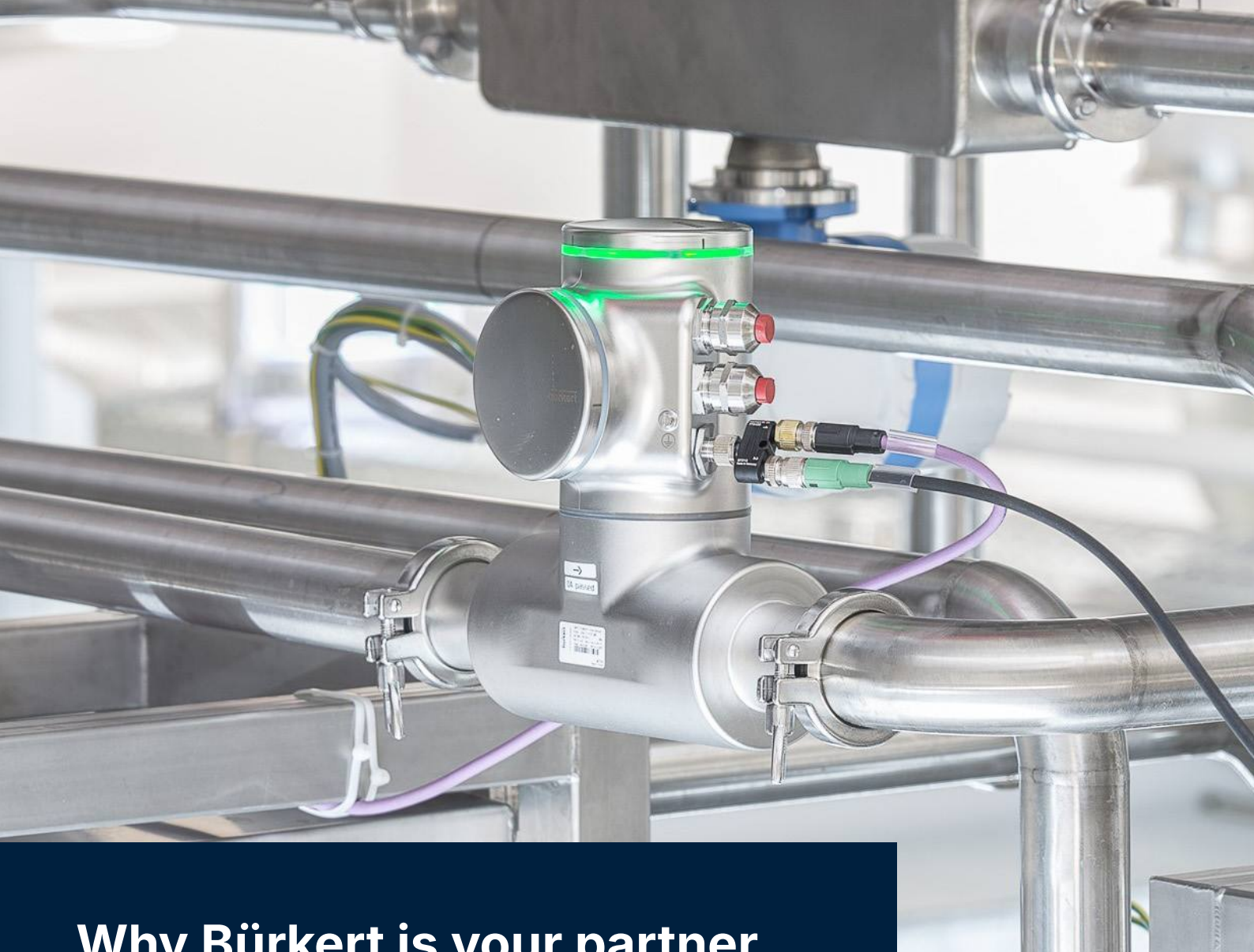
Product range overview

Pioneers of Flow.

bürkert
FLUID CONTROL SYSTEMS

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Why Bürkert is your partner

As specialists in fluidic systems, we have a holistic approach to sensor technology – as an integral part of your application's control circuit. Our portfolio comprises a comprehensive range of high-performance sensors for all key measurement parameters, tailored precisely to the requirements of your industry. Decades of expertise and an in-depth understanding of complex processes position us as a trusted partner for safe and sustainable solutions. In close collaboration with you, we develop systems that drive efficiency and secure long-term success.

Flow

Overview

Flowmeters determine the mass or volume flow rate of a gas or liquid – i.e. the quantity of a medium that flows through a cross-section in a specific period of time. Modern flow measurement devices meet complex requirements: they deliver high measurement accuracy, integrate easily into a wide range of control and monitoring systems, and comply with all industry-specific standards.

Bürkert offers a broad portfolio of mechanical and electronic flowmeters that work on a range of operating principles. From simple mechanical methods to advanced multiparameter measurements – we deliver bespoke solutions tailored to your application, whether that involves minute individual droplets or large volume flows.



Paddle wheel

Simple | Established | Inline or Insertion

Page 8



Oval gear

For viscous liquids | Reliable | Simple

Page 13



SAW

Hygienic | Innovative | Multiparameter

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Electromagnetic (EMF)

Inline or Insertion | Flexible | Compact

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Flow

3 Remote



+

2 Transmitters



+

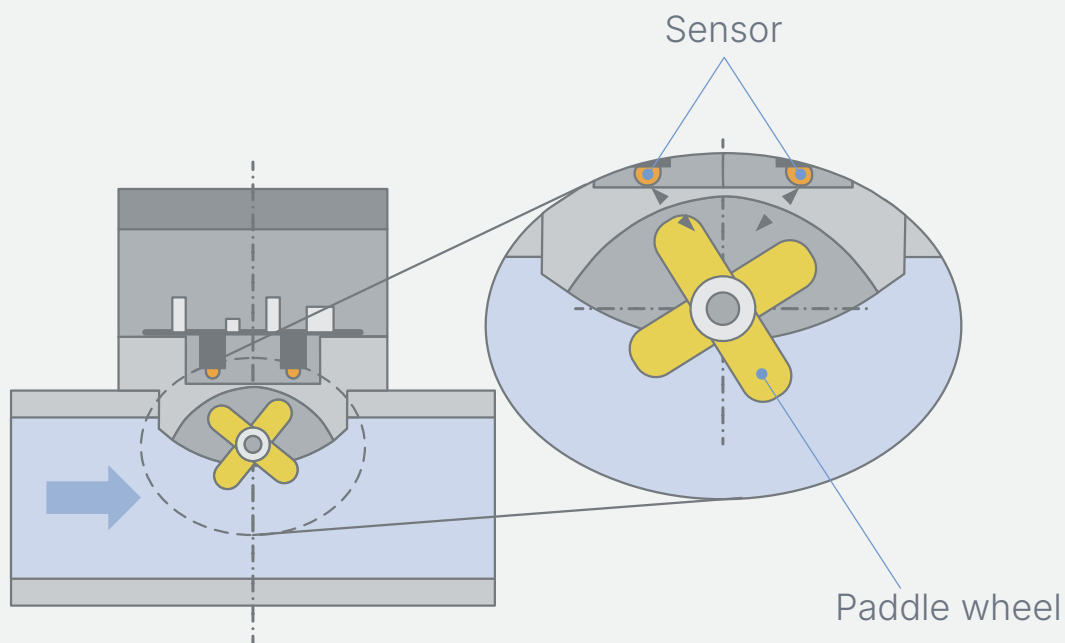
1 Sensor/fitting





Paddle wheel

The paddle wheel flowmeter is a mechanical flowmeter, whereby a paddle wheel rotates inside a pipeline due to the flow of the liquid. A sensor element detects the speed of the paddle wheel optically or magnetically and transmits a corresponding frequency signal to the transmitter. It then calculates the flow rate using a specific conversion factor that depends on the nominal pipe diameter. The flowmeter outputs the result digitally or analogously.





Type 8012

- Cost-effective integration in pipe systems without any additional pipelines
- Optical or magnetic measurement principle
- Output: either 4...20 mA analogue output and/or transistor output (frequency or switch)
- Outputs configurable (through USB interface with PC)



TYPE 8012

Inline flowmeter for continuous measurement

The magnetic variant of Type 8012 is particularly suited to neutral and mildly aggressive liquids, while the optical variant is specifically designed for infrared-transmitting liquids. The measuring device consists of a fitting (Type S012) and an electronic module (SE12). It is suitable for pipelines with a nominal diameter of DN 06 to DN 65 or customer-specific block systems. Depending on the variant, a pulse output or an additional 4...20 mA current output is available.



**Quick,
easy installation**



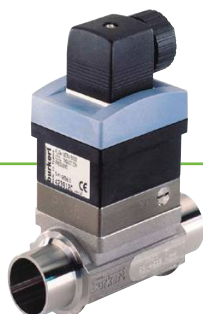
**Compact and
modular**



Economical



**Configurable
pulse output**



Type 8030

- Cost-effective integration into pipe systems
- 3-wire frequency-pulse variant for direct connection to a PLC (PNP and NPN)
- Simple connection to Bürkert evaluation devices in a separate variant
- HT variant available for high temperatures and pressure (max. 125 °C/max. 40 bar)
- Ex variant available



TYPE 8030

Inline flowmeter for continuous measurement

This flowmeter Type combines a compact inline sensor (S030/S030 HT) with a transmitter (SE30/SE30 HT). It is designed for neutral and mildly aggressive liquids with a low solids content. The bayonet fitting enables fast, leak-tight assembly. The fitting system is ideal for easy integration into pipelines with a nominal diameter of DN 06 to DN 65. The measuring device generates a pulse frequency signal proportional to the flow velocity. The signal can be processed by a Bürkert transmitter or controller.



**Quick,
easy installation**



Leak-free operation



Compact



**Proportional
frequency signal**



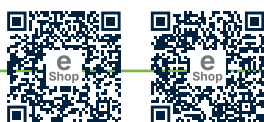
Type 8032

- Measurement display, monitoring, transmission and two-point control in a single device
- Freely adjustable outputs (transistor or relay)
- Automatic calibration via Teach-in
- Process value output: 4...20 mA
- Flow threshold detector



Type 8035/Type 8036

- Up to PN 16, measurement tube size DN 06 to DN 65
- Display for showing the flow rate and volume with two totalisers, or dosing quantity
- Configurable outputs for Type 8036 ELEMENT: one to two transistor outputs and one to two current outputs of 4...20 mA
- Automatic calibration via Teach-in
- Inputs (with batch controller) and all outputs can be checked without the need for actual flow
- Total and daily counters for quantity and number of dosing operations; volume or mass counter display (with dosing unit)



TYPE 8032

Inline flowmeter for continuous measurement

Designed for flow measurement or monitoring in clean, neutral to aggressive liquids, Type 8032 combines a compact inline sensor-fitting with paddle wheel (S030) and a transmitter with display (SE32). Thanks to the bayonet fitting and Bürkert's inline quarter-turn system, the device is quick to assemble and provides a reliable, leak-tight connection. Type 8032 fits all pipelines with DN of 06 to 65. It offers configurable switching outputs (transistor or relay) or a 4...20 mA process value output. Switching points can be set using buttons on the display.

 Integrated display	 Direct valve control
 Leak-free operation	 Resistant to aggressive substances

TYPE 8035/TYPE 8036

Inline flowmeter for continuous measurement

Designed for the measurement or dosing of neutral to mildly aggressive, solids-free liquids, Type 8035/8036 combines a compact inline paddle-wheel sensor fitting (S030) with a transmitter featuring a display (SE35). The system integrates seamlessly into pipelines with nominal diameters ranging from DN 06 to DN 65. Type 8035 is available with standard signal output or battery-operated display/quantity counter. Type 8036 in the ELEMENT range is available with up to four configurable outputs – e.g. for valve control, alarming or for setting up one/two control loops.

 For measurement or dosing	 Simple, quick integration
 Leak-free operation	 High precision



Type 8031

- Cost-effective solution for low flow rates and liquids with low solids content
- Media-wetted parts made of ECTFE, sapphire, coated stainless steel, FKM or EPDM for use in aggressive liquids
- 3-wire technology with paddle wheel and Hall sensor up to 80 °C, 10 bar
- Frequency output proportional to flow rate, PLC-compatible



TYPE 8031

Inline flowmeter for continuous measurement of low flow rates

This compact low-flow sensor with paddle wheel and Hall sensor is ideal for use with aggressive, low-solids liquids. Type 8031 uses a highly cost-efficient measurement principle for local flow detection and delivers a flow-proportional frequency signal. This data can be transmitted and evaluated with ease – ideally, for example, in combination with Bürkert transmitter Type 8025.



Economical



Resistant to aggressive liquids



Robust design



Compact





Type 8020

- Cost-effective integration in pipe systems without any additional pipelines
- 3-wire frequency-pulse variant for direct connection to a PLC (PNP and NPN)
- Easy connection to Bürkert evaluation devices in remote variant



Type 8025/Type 8026

- Up to PN 10, measurement tube size DN 06 to DN 400
- Type 8026: one to two transistor outputs and one to two current outputs of 4...20 mA, configurable
- Display for showing the flow rate and volume with two totalisers, or dosing quantity
- Automatic calibration via Teach-in
- Inputs (with batch controller) and all outputs can be checked without the need for actual flow



TYPE 8020

Inline flowmeter for continuous measurement

For continuous flow measurement of neutral to mildly aggressive, low-solids liquids: Type 8020 with paddle wheel can be easily integrated into pipelines from DN 20 to DN 400 thanks to the Bürkert fitting system. The device generates a pulse-frequency-based signal proportional to the flow velocity, which can be further processed by a Bürkert transmitter or controller.



Large pipeline area



Easy integration



Leak-free operation



Pulse rate output

TYPE 8025/TYPE 8026

Insertion flowmeter for continuous measurement

This device is ideally suited for flow measurement or dosing of neutral to mildly aggressive, solids-free liquids.

Type 8025 is available as a compact unit with paddle wheel sensor (for pipelines with DN 20 to DN 400) or in remote variant, e.g. for wall mounting or control cabinet. Type 8026 ELEMENT- The design features up to four configurable outputs.



Numerous connection options



Measurement or dosing



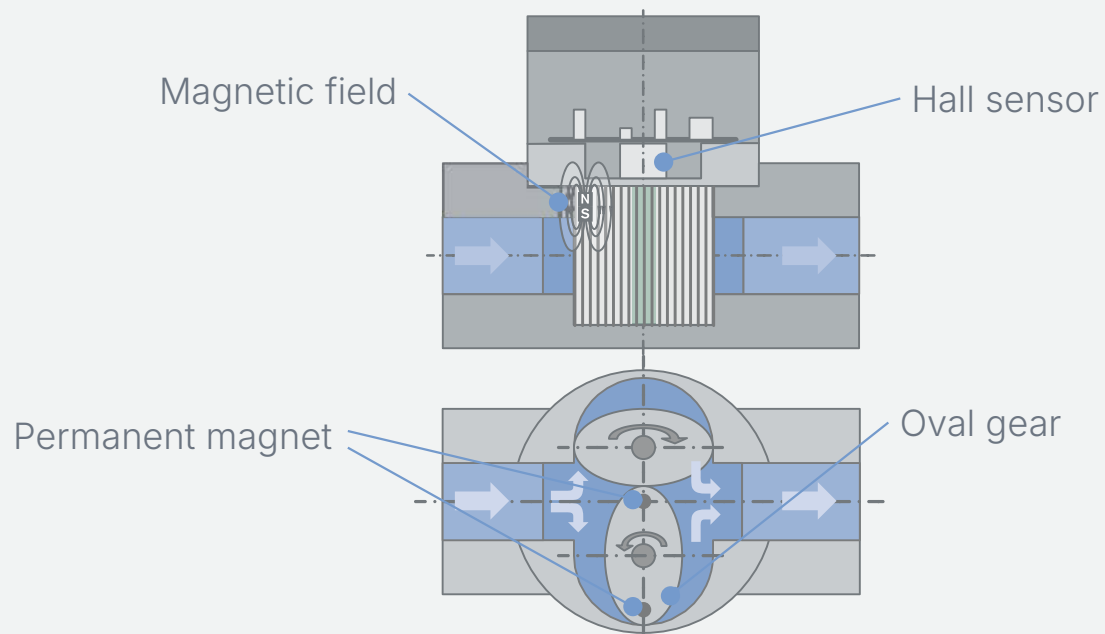
Large pipeline area



Robust design

Oval gear

The oval gear flowmeter measures the volume flow rate of liquids by means of two interlocking oval gears, which transport a precisely defined volume of the flowing medium with each revolution. A sensor detects the number of these rotations and transmits corresponding impulses to the transmitter, which calculates the volume flow rate. The flowmeter outputs the measured value in either digital or analogue form.





Type 8077

- For media with high viscosity
- Minimal pressure drop and high pressure resistance
- Data displays, monitoring, signal transmission, 2-point control, and dosing control in combination with various transmitters
- A 1-m long 5-wire cable is integrated



TYPE 8077

Inline sensor for low flow rates

Specifically designed for highly viscous media, this sensor enables precise measurement as well as dosing and filling control of substances such as adhesive, honey or oil.

Type 8077 uses the proven oval gear principle to deliver precise, repeatable measurement values across a wide volume-flow and viscosity range. All variants are equipped with an open-collector (NPN) frequency output and a reed-contact frequency output. Additional functions can be obtained by simply connecting to transmitters such as Types 8025, 8611 or 8619.



High measurement accuracy



Even in low pressure conditions



Extensive compatibility



Easily expandable



Type S077/Type SE30

- DN 15 to DN 100
- Inline quarter-turn technology
- Electronics can be supplied for display, monitoring, signal transmission, 2-point control and dosing control purposes
- SE30 also available in Ex variant



TYPE S077/TYPE SE30

Inline sensor for flow measurement/with transmitter

This inline sensor fitting Type S077 is specifically designed for flow measurement or dosing of high-viscosity liquids, such as adhesives, honey, or oil. Here it is combined with the Type SE30 transmitter. Using the principle of positive displacement (with oval gears), Type S077 operates with high precision and repeatability. The minimal pressure drop and good pressure resistance allow for use in various applications: gravity flow or inline (pumped).



Broad measuring range



Low pressure loss



Proven method



Robust design



Type S077/Type SE32

- DN 15 to DN 100
- Inline quarter-turn technology
- Electronics can be supplied for display, monitoring, signal transmission, 2-point control and dosing control purposes



TYPE S077/TYPE SE32

Inline sensor for flow measurement/ with transmitter

This inline sensor fitting Type S077 is specifically designed for flow measurement or dosing of high-viscosity liquids, such as adhesives, honey, or oil. In this case it is combined with the Type SE32 transmitter. Using the principle of positive displacement (with oval gears), Type S077 operates with high precision and repeatability. The minimal pressure drop and good pressure resistance allow for use in various applications: gravity flow or inline (pumped).



Broad measuring range



Low pressure loss



Proven method



Robust design



Type S077/Type SE35 Type S077/Type SE36

- DN 15 to DN 100
- Inline quarter-turn technology
- Electronics can be supplied for display, monitoring, signal transmission, 2-point control and dosing control purposes



TYPE S077/TYPE SE35

TYPE S077/TYPE SE36

Inline sensor for flow measurement/ with transmitter or dosing unit

This inline sensor fitting Type S077 is specifically designed for flow measurement or dosing of high-viscosity liquids, such as adhesives, honey, or oil. Here it is combined with the transmitter or dosing device Type SE35 or SE36. Using the principle of positive displacement (with oval gears), Type S077 operates with high precision and repeatability. The minimal pressure drop and good pressure resistance allow for use in various applications: gravity flow or inline (pumped).



Broad measuring range



Low pressure loss



Proven method



Robust design

Technology innovation

Surface Acoustic Waves (SAW)

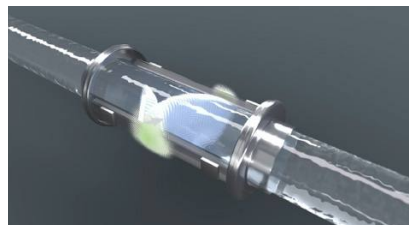
SAW (surface acoustic wave) technology for innovative measurement of flow rate and other media properties

SAW refers to waves that propagate along surfaces. In the case of the FLOWave flowmeter, surface acoustic waves propagate along the sensor measurement tube and can be used to measure the flow rate of liquids.

The surface waves are generated by interdigital transducers (IDTs). These are placed at specific points along the FLOWave measurement tube. An electrical impulse excites the IDTs, thereby generating SAWs.

The wave front propagates along the tube surface, as well as through the medium, from the initial centre of excitement that arises. The wavefront is reflected by the measurement tube, allowing it to pass repeatedly through the medium in the pipe.

- Contactless measurement
- No moving parts in the measurement tube
- No pressure drop
- Not sensitive to plant vibrations



Did you know?

The exact sequence and number of wave reflections depends on factors such as the nominal diameter of the flowmeter, the length of the sensor measurement tube and the size and placement of the IDTs. Bürkert has mastered the use of SAWs for flow rate measurement, and with FLOWave has launched the first flowmeter on the market that utilises this measurement principle.

➔ www.country.buerkert.com/SAW



Robust & suitable for industrial use



Allows measurement of media with low conductivity



Optimal hygiene & process reliability



Wear-free measurement principle

Product innovation

Type 8098 FLOWWave

The future of contactless flow rate measurement

With years of proven use in industry, the hygienic Type 8098 FLOWWave flowmeter combines innovation and reliability to take processes in the pharmaceutical, biotechnology, and food and beverage industries to a new level.

- Measurement with surface acoustic waves (SAW)
- Hygienic and easy to clean
- Compact & lightweight design
- Extensive range of measured values
- Repeatable detection of media changeovers



Did you know?

FLOWWave can be adapted to your specific application: device variants are available with different display positions or without a display. The straight measurement tube without internal components, together with the device's low weight, allows installation in virtually any orientation. Measurement is also independent of the electrical conductivity of the medium.

➔ www.country.buerkert.com/FLOWWave



Reduced space requirements



Optimal hygiene & process reliability



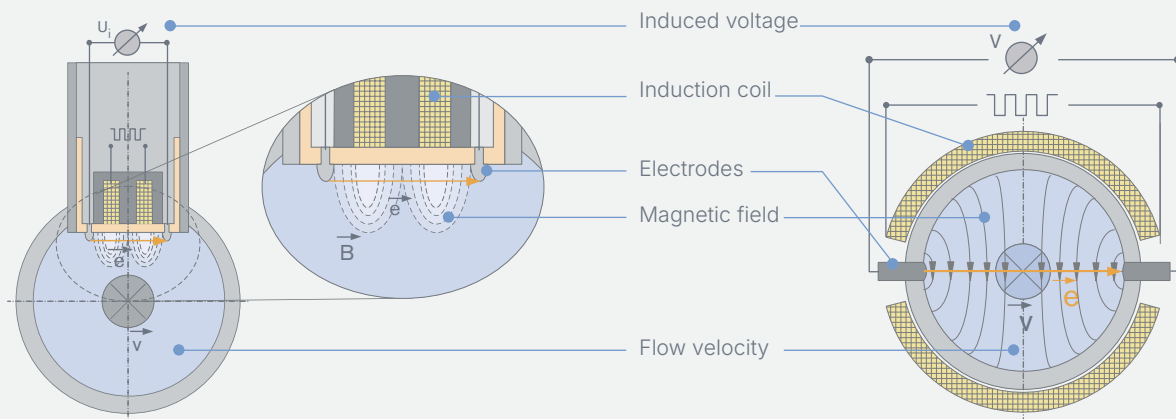
Increased flexibility



Wear-free measurement principle

Electromagnetic (EMF)

The electromagnetic flowmeter (EMF) is based on Faraday's induction principle. When a conductive liquid flows through a magnetic field, a voltage is generated along two electrodes that are at right angles to the flow direction. This voltage is measured and converted into a standard signal, which can then be used to determine the flow rate. The magnetic field is generated by the coils of the flowmeter inside the pipeline itself.



Insertion



Type 8041

- Sensor without moving parts
- Flowmeter with 2-point control function
- Application-specific calibration via teach-in functionality
- Clean-in-Place (CIP) compatible
- FDA-compliant materials



Type 8045

- Sensor without moving parts
- Displays volume flow rate as well as volume
- Simulation of all output signals
- Clean-in-Place (CIP) compatible, FDA-compliant materials
- Variant with electrodes made of alloy C22



TYPE 8041

Electromagnetic insertion flowmeter

Type 8041, consisting of electronic module and sensor, electromagnetically measures the flow rate of conductive (from 20 $\mu\text{S}/\text{cm}$), neutral or aggressive liquids in pipelines with nominal diameters of DN 06 to DN 400.

It offers a 4...20 mA current output, a frequency output and a relay output, as well as simple parameterisation via DIP switch and LED display. Depending on the variant, the sensor is available in PVDF or stainless steel – the latter for higher pressures (PN 16) and temperatures of up to 150 °C.



Also suitable for aggressive liquids



Multiple outputs



Simple parameterisation



For high pressures and temperatures

TYPE 8045

Electromagnetic insertion flowmeter

Type 8045 measures conductive liquids, including aggressive ones, with conductivities from 20 $\mu\text{S}/\text{cm}$ in pipelines with a nominal diameter of DN 06 to DN 400. Featuring a backlit display, a 4...20 mA output, pulse and relay outputs, and two counters, the device is suitable for a broad range of applications. The stainless steel sensor variant is also suitable for high pressures (PN16) and temperatures of up to 110 °C.

The variant with electrodes made of C22 alloy is suitable for applications with aggressive liquids (chemicals) and particularly for seawater applications.



For a wide range of applications



PVDF, stainless steel or alloy

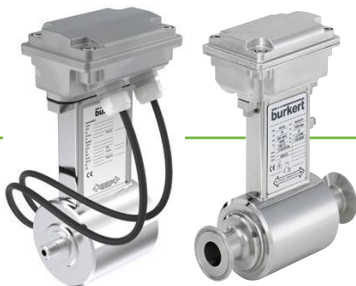


Informative display



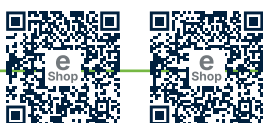
Robust design

Inline



Type S051/Type S056

- To be connected to transmitter Type SE58 Clean-in-place (CIP) compatible
- Type S051: flow measurement 0.2 to approx. 200 l/min for DN 03 to DN 20
- Type S056: hygienic variant, 3A certification 0.2 to approx. 4,500 l/min for DN 03 to DN 100



TYPE S051/TYPE S056

Electromagnetic inline flowmeter

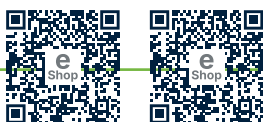
These electromagnetic sensors are suitable for measuring low flow rates of conductive liquids (from 5 or 20 $\mu\text{S}/\text{cm}$ depending on the transmitter). When combined with the SE58S transmitter, the result is a compact device; with type SE58M or L, compact or remote versions are available, each tailored to different performance requirements, applications and approvals. Type S051 features G and NPT threaded connections as standard, while Type S056 is supplied with clamp or (dairy) thread connections.

 For low flow rates	 Compact or remote
 Hygienic variant available	 Various different connection options



Type S054/S055

- For connection to a Type SE58 transmitter (with or without display, in compact or remote variant) for flow measurement
- Variant mainly for use in applications with water
- Flow measurement 25 to approx. 75,000 l/min for DN 25 to DN 400



TYPE S054/S055

Electromagnetic inline flowmeter

Type S051/S056 are electromagnetic sensors designed for liquids with a minimum conductivity (from 5 or 20 $\mu\text{S}/\text{cm}$ depending on the transmitter) and for use in water measurement applications. When combined with the SE58S transmitter, the result is a compact device; with type SE58M or L, compact or remote versions are available, each tailored to different performance requirements, applications and approvals. Type S054 is provided with wafer connections as standard, while Type S055 uses flanged process connections.

 Compact or remote	 Precise measurement
 Reliable	 Various different connection options



Type SE58

- Must be combined with sensor Type S051, Type S054, Type S055 or Type S056
- Continuous measurement, high measuring accuracy
- Available in various materials (plastic or stainless steel housing)
- Compact and remote variants, available with or without display



TYPE SE58

Transmitter for electromagnetic flow sensors

Type SE58 is a transmitter for compact or remote flowmeters such as Type S051, 054, 055, 056. Liquids must have a minimum conductivity of 5 $\mu\text{S}/\text{cm}$. The S variant delivers a compact flow device, with or without display, offering a measurement uncertainty of 0.5%. The M and L variants support both compact and remote solution concepts. They enable extended data, connection and configuration options. With a measurement uncertainty of 0.2%, the L variant delivers particularly high performance.



Range of variants to suit requirements



Precision level of up to 0.2%



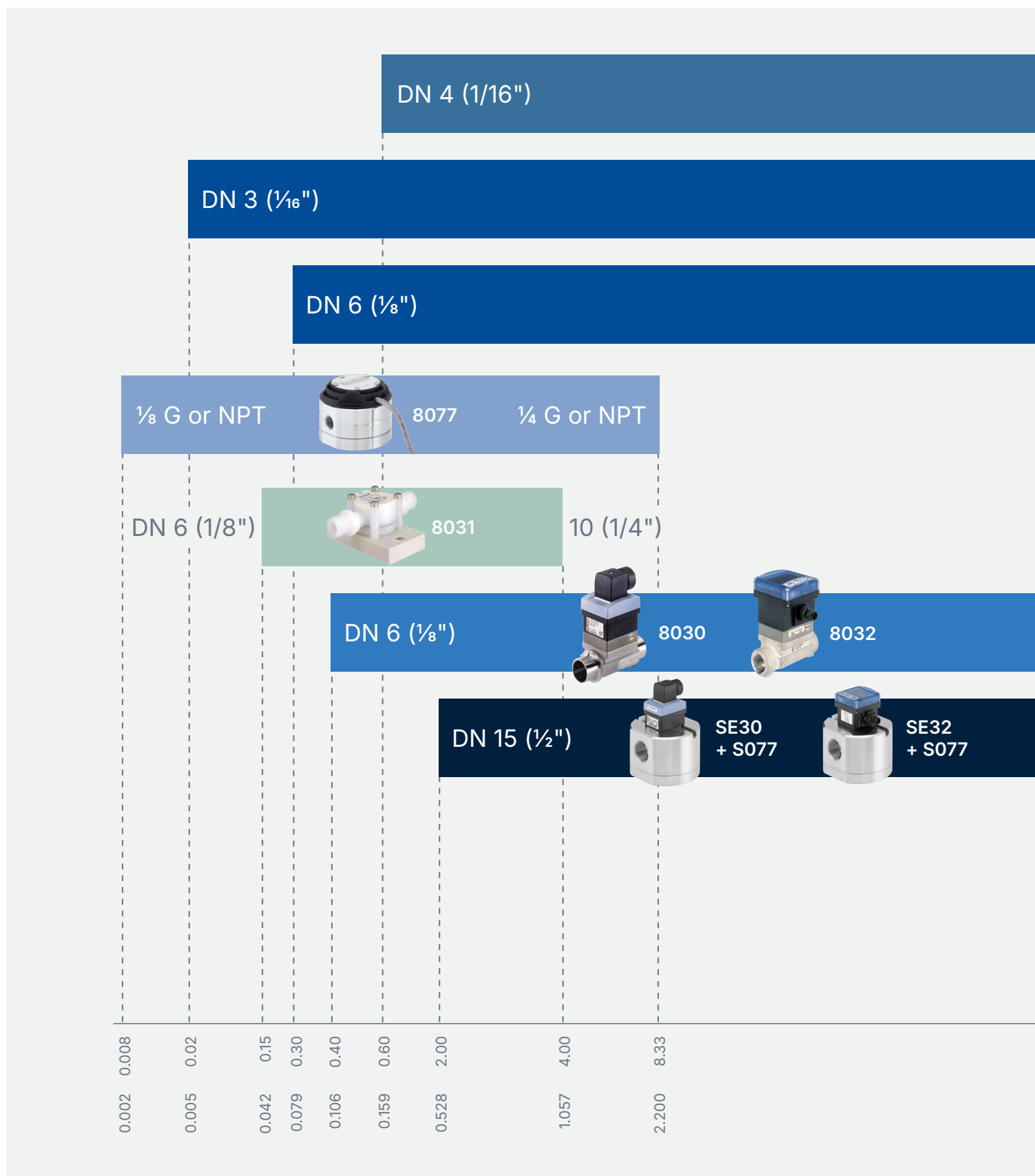
Dosage can be increased

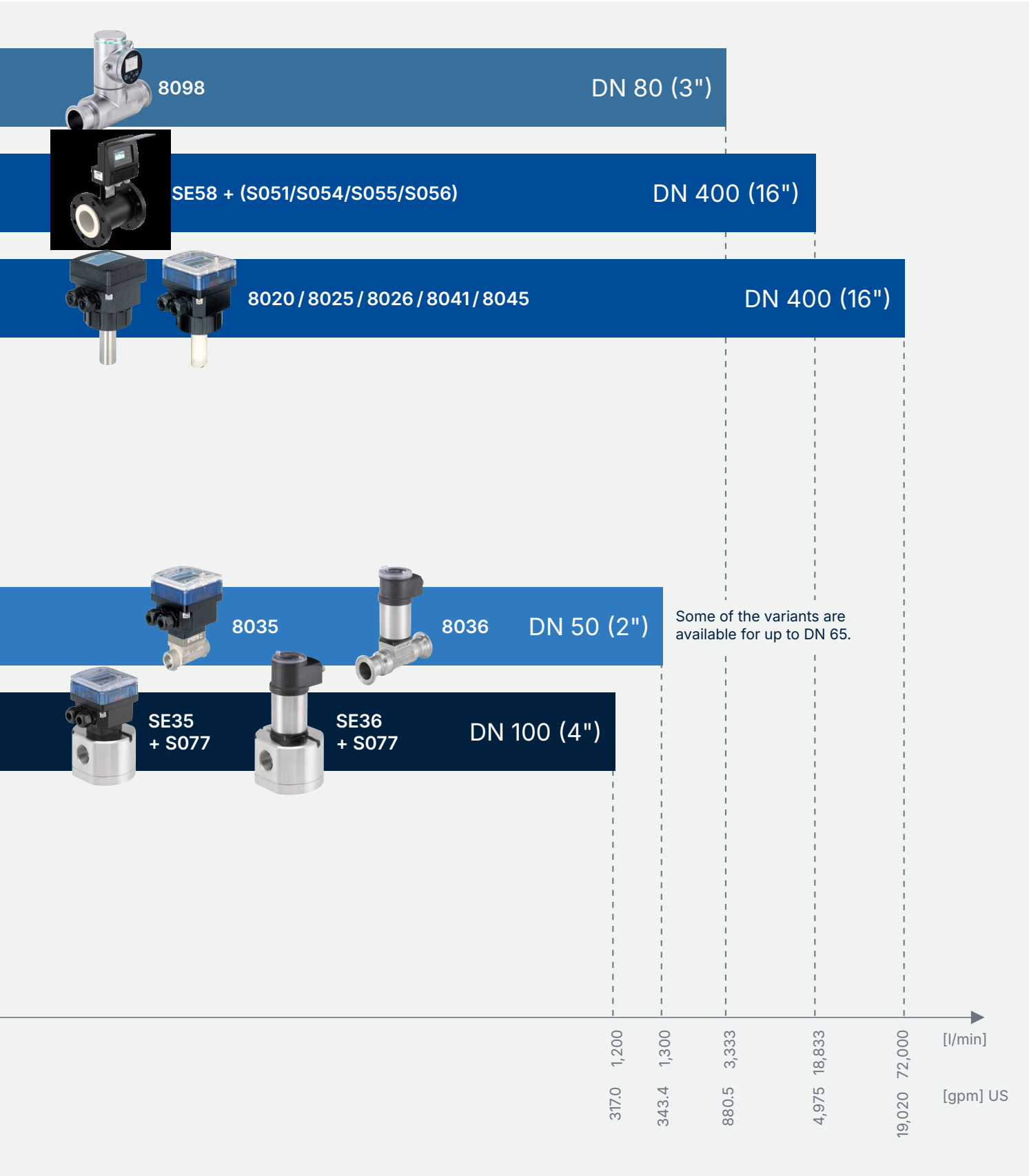


Wide selection of materials, e.g. stainless steel

Flow measurement selection guide

The overview below shows the measuring ranges of all flowmeters depending on the type of flow measurement technology.





Liquid analysis

Overview

Within Bürkert's broad product portfolio, you will always find the ideal solution for analysing a wide range of media. Ranging from traditional insertion solutions to innovative cube technology, our reliable devices capture measurement parameters such as pH/ORP, conductivity, chlorine and more. In addition, unique innovations such as our compact online water analysis system or our microsensors enable highly efficient process monitoring at the highest standard.



Insertion

Established | Flexible | Inline analysis

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Cubes

Innovative | Compact | Efficient |
Online analysis

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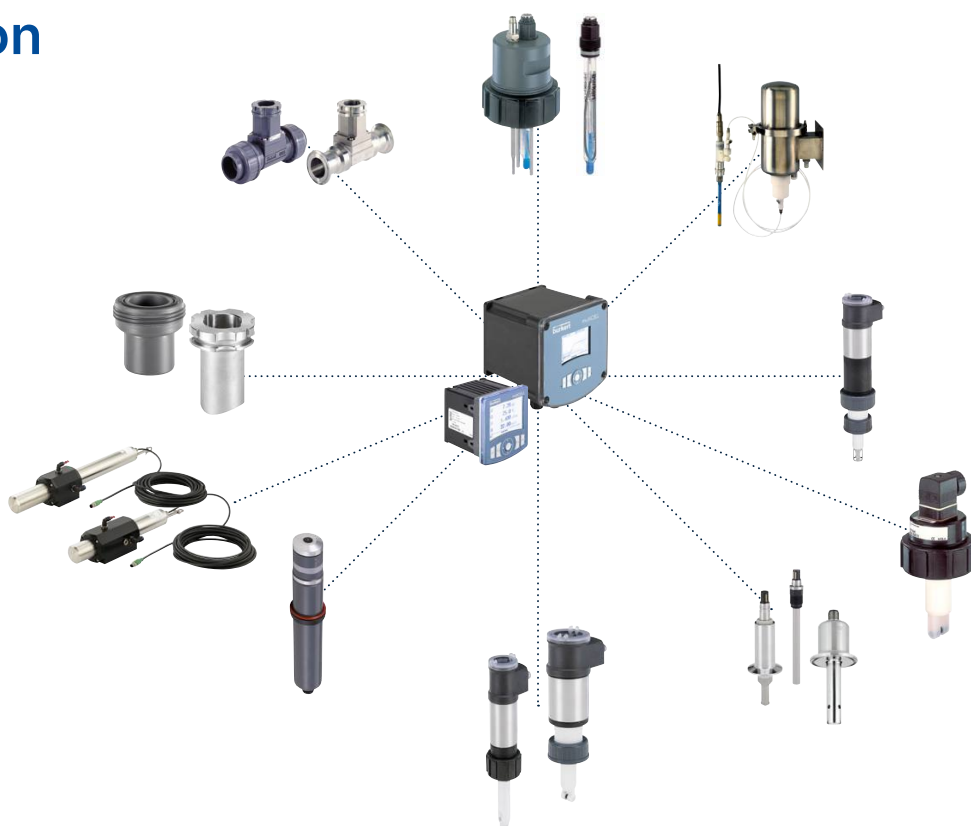


Microsensors

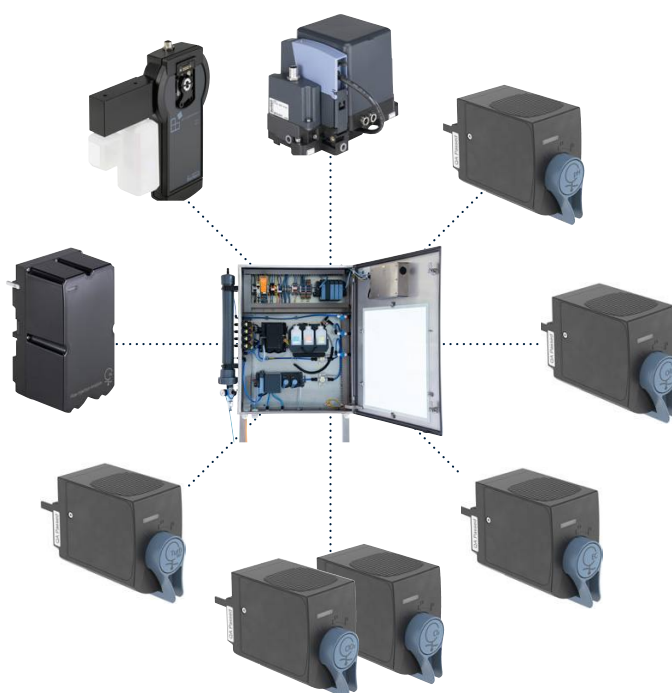
Innovative | Customized | Integrable

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Insertion



Cubes



Liquid analysis

3 Remote



+

2 Transmitters



+

1 Sensor/fitting





Insertion

Bürkert's insertion sensors provide a proven solution for precise and reliable liquid analysis measurements. These sensors are mounted directly onto suitable fittings and are permanently connected to a compact transmitter – a robust unit for use in a wide variety of applications.

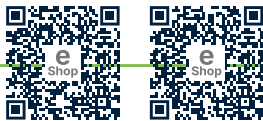
For more complex requirements, the sensors can also be connected via terminal blocks to a universal controller such as Type 8619 multiCELL – ideal for modular and expandable system solutions. The sensors detect a variety of analytical parameters such as pH value, conductivity, chlorine, redox potential or turbidity and convert raw signals (e.g. 4...20 mA) into meaningful measured values using the transmitter. Insertion sensors represent a classic, hard-wired measurement architecture. They are ideal when reliable single measurements and direct integration into existing systems are required.

pH/ORP



Type 8200/Type 8203

- Holders for various types of systems and applications
- Large range of sensor holders
- General purpose and pharmaceutical applications, water treatment, food and beverage industry
- Probe Type 8203: pH value, redox potential; wide range of variants; suitable for pipeline sizes DN15 to DN 200



TYPE 8200/TYPE 8203

Fittings for analytical probes/pH and redox potential probes

Type 8200 fittings allow the installation of a wide range of analysis probes – such as Type 8203 for pH or redox potential measurement – on tanks or pipelines. They include a wide range of process connections for general and hygienic holders, as well as transparent one-piece holders for multi-parameter measurements. For the process integration of multiple probes, analysis measurement chambers are available. Applications include positioning in the direction of flow, as well as steam sterilisation, autoclaving, clean-in-place cleaning, and much more.



Wide variety of variants



Flexible installation options



Analysis measurement chambers where needed



Also for temperature sensors



Type 8201

- Special glass-free pH probe for connection to Type 8619 multiCELL
- Sterile design, clean-in-place-compatible, inline sterilisable
- Robust and break-resistant design
- Long service life, long calibration intervals
- Especially suitable for food/beverage processing



TYPE 8201

pH measuring system for hygienic applications

A robust, glass-free pH measurement system for absolute measurement in liquids used in hygienic processes such as food and active ingredient production. Type 8201 reliably measures media with pH values from 0 to 12 at temperatures up to 140 °C and pressures up to 6 bar – including viscous or solids-containing liquids. The smooth enamel surface is easy to clean. The probe stays in place during CIP cleaning. This eliminates the need for interchangeable fittings.



Glass-free and robust



For hygienic processes



Even for high temperatures



pH spectrum from 0 to 12



Type 8202

- Compact measuring device for direct connection to programmable logic controller (PLC)
- Parameterisation and calibration as well as transfer of parameterisation data
- Designed for use with standard 120 mm PG 13.5 pH/redox potential probes
- Simple one or two-point calibration can be carried out directly on the device; simulation of measured values and diagnostic functions



TYPE 8202

pH or redox potential transmitters

Type 8202 measures pH or redox potential in clean and contaminated liquids, including protein- or sulphide-loaded media, as well as in low-conductivity liquids. The device is designed to be easy to install and maintain. The ELEMENT Standard variant offers up to four outputs and an optional display for configuration purposes. The ELEMENT neutrino version operates without a display, as a 2-wire device with 4...20 mA or IO-Link/büS communication – for compact, digital processes.

The data is available via M12 connector or terminal strip.



Compact



Maintenance-friendly



Flexible connection variants



Digital process integration

Conductivity



Type 8220

- Compact variant for DN 15 to DN 200
- Covers a wide measurement range due to various cell constants
- A variety of connection options with different fittings



TYPE 8220

Conductivity sensor

Type 8220 is a compact conductivity sensor with four conductivity electrodes that, with different cell constants, enable a wide measuring range. A Pt1000 sensor for automatic temperature compensation is integrated. The sensor provides a raw signal and is supplied with a standard connector (EN 175301-803). It should be connected to transmitter Type 8619 multiCell. Type 8220 is installed in Type S020 fittings; variants for tanks and immersion mounting are available.



**Broad
measuring range**



Compact



**Integrated
temperature
compensation**



**Also available for
tubes and tanks**



Type 8221

- Perfect for demanding applications in the hygienic industry (CIP- and SIP-compatible)
- Extended conductivity range thanks to the available variants
- The wide range of supported process connections enables customised solutions tailored to customer needs
- Perfectly suited to the Type 8619 multi-function transmitter/controller



TYPE 8221

Conductivity sensor for hygienic applications

The hygienic Type 8221 conductivity probes can be used for a wide range of pure or concentrated liquids, making them ideal for food, pharmaceutical, biotech and chemical processes. Depending on the variant, they use 2-electrode technology (for clean media) or 4-electrode technology (for contaminated media). The latter prevent polarisation effects and guarantee very good linearity across the measuring range. All variants feature a Pt1000 temperature sensor and can be deployed with the transmitter Type 8619.



Custom variants



**Broad
measuring range**



**Integrated
temperature sensor**



**For clean and
contaminated
liquids**



Type 8222

- Perfect for clean water and slightly concentrated liquids
- Compact measuring device for direct connection to programmable logic controller (PLC)
- Parameterisation, calibration and transfer of parametrisation data all possible thanks to a removable display/configuration module
- Simulation of measured values for diagnostics



TYPE 8222

Conductivity meter

Type 8222 uses a 2-electrode sensor to measure the conductivity of liquid media. The Pt1000 temperature sensor is integrated. Available with three cell constants (0.01/0.1 in stainless steel, 1.0 in graphite) for different conductivity ranges. The ELEMENT Standard variant offers up to four outputs and an optional display. The ELEMENT neutrino version is a 2-wire device with 4...20 mA or digital communication via IO-Link or bÜS. Designed for installation with G 1½" or G ¾" connections.



Compact



Custom variants



Simple installation and maintenance



Digitally networkable (IO-Link/bÜS)



Type 8228

- Perfect for concentrated liquids and wide conductivity ranges
- Compact measuring device for direct connection to programmable logic controller
- Simulation of measured values for diagnostics
- Variants of the sensor available in PP, PVDF or PEEK



TYPE 8228

Inductive conductivity meter

Type 8228 is an inductive conductivity meter for aggressive or concentrated media such as acids, alkalis or saline liquids. It is ideal for monitoring cooling water, industrial water treatment, or cleaning media in clean-in-place processes.

The ELEMENT Standard variant offers up to four outputs and an optional display. The ELEMENT neutrino version communicates digitally via IO-Link or bÜS. The process connection is made via G 2" thread or 2" clamp.



Custom variants



Aggressive liquids

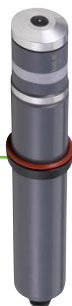


IO-Link/bÜS compatible



Cleaning in place (CIP)

Chlorine



Type 8232

- “Trace” sensor with three electrodes for measuring free chlorine at low concentrations
- Sensor with three electrodes and greatly reduced pH dependence for measuring free chlorine
- Sensor with two electrodes for measuring free chlorine for standard applications at a constant pH value
- Sensor with three electrodes and greatly reduced pH dependence for measuring total chlorine



TYPE 8232 Chlorine sensor

Type 8232 is an electrochemical sensor for measuring free or total chlorine from inorganic sources. Four variants are available: a trace sensor for lowest concentrations, 2- and 3-electrode sensors for free chlorine (with current output, some pH-independent) and a 3-electrode sensor for total chlorine. The current output for all sensors is a 5-pin circular plug. Type 8232 is ideally suited to a wide variety of water and process applications.



**Electrochemical
chlorine detection**



Compact



Precise measurement



Custom variants

SAK254



Type MS08

- UV absorption measurement at 254 nm
- Monitoring of dissolved organics in drinking water
- EDIP sensor: compatible with Type 8905/8906 measurement systems
- UV LED technology for long-lasting sensors
- Nano-coated glasses to reduce maintenance



TYPE MS08

SAC 254 sensor

Type MS08 is an optical UV sensor for absorption measurement in the UV range at 254 nm. It detects dissolved organic substances in water – ideal for quality assurance in drinking water production.

The sensor measures SAC 254 and turbidity at 530 nm, and determines TOCeq, BODeq and CODEq. Absorption measurement is performed using two LEDs and a sensor. The path length is optimised for drinking water, but can be adapted to the application.



For quality-assured drinking water purification



UV technology



Durable



Low-maintenance

Nitrate



Type MS09

- UV photometer for nitrate monitoring
- Reagent-free optical measurement
- EDIP sensor: compatible with Type 8905/8906 measurement systems
- Xenon flash lamp, 3 channels for optical measurement with reduced interference
- Nano-coated glasses to reduce maintenance



TYPE MS09

Nitrate sensor

This optical sensor for absorption measurement in the UV range is designed for precise determination of the nitrate content in drinking water. With a xenon flash lamp and three detection channels, Type MS09 measures nitrate at 212 nm, organic substances at 254 nm and turbidity at 360 nm, ensuring reliable measurement with minimal cross-interference. It is designed for use in raw and treated water applications and helps ensure compliance with regulatory limits through continuous monitoring.



Reliable nitrate measurement



For raw and treated water



High-quality xenon flash lamp



Low-maintenance

Fittings



Type S020

- Universal fitting for insertion measuring devices for non-aggressive, aggressive or dirty liquids
- A wide range of process connections: DN 06 to DN 400 in PVC, PP, PVDF, PE, stainless steel or brass
- Transmitters can be supplied for display, monitoring, signal transmission, 2-point control and dosing control



TYPE S020

Insertion fitting for volume flow rate or analytical measurements

The Type S020 fitting can be used to connect any insertion devices for in-pipeline measurement, such as for flow rate, pH, redox potential (ORP) or conductivity. The fitting is available for paddle wheel and electromagnetic flowmeters, as well as analytical measurement devices, with G 2" or clamp connections.

 Universal fitting	 Wide range of applications
 Custom variants	 Various process connections



Type S022

- Universal adapter/fitting for Type 8202 and Type 8222 ELEMENT measuring devices for non-aggressive, aggressive or dirty liquids
- Adaptation for standard pipeline systems or conversion of a Bürkert Type S020 fitting into a Type S022 fitting
- Nominal diameter of pipeline from DN 06 (with reduction) to DN 110 (plastic) or larger (stainless steel)



TYPE S022

Insertion adapter/fitting for ELEMENT analysis measuring devices

The Type S022 adapter is used for installing ELEMENT analysis measuring devices in pipelines or containers. Various adapter fittings are available: adhesive fittings (PVC-U) and weld fittings (PP, stainless steel) for T-fittings as well as threaded fittings (PVC) for screw-in installation. Replacement fittings (PVC, PP, stainless steel) enable the conversion of an S020 fitting to an S022 fitting. PVC fittings are available as T-fittings (metric/ASTM), socket connections, welded connections or clamp connections.

 Multiple connectivity options	 Tube and tank installation
 Wide selection of materials	 For retrofitting and new installation

Cubes

Bürkert's sensor cubes mark the beginning of a new era in liquid analysis: Online measurement is performed continuously via bypass systems – ideal for monitoring drinking and process water in real time.

Each cube is a self-contained, digital sensor module that records specific analysis parameters such as pH value, conductivity, chlorine or turbidity. The cubes are simply plugged onto a backplane without tools and communicate with the system via the digital bus interface. Automatic registration and parameterisation make for streamlined installation.

The modular concept allows for the flexible combination of various sensor cubes. This allows up to 30 sensors to be integrated into a single system bus. Operation is intuitive via a 7" touchscreen or the Bürkert Communicator. For system integration, both panel-mounted versions and compact control cabinet solutions such as the Type 8906 are available. Thanks to the innovative MEMS technology, the sensor cubes operate with minimal reagent requirements and are particularly low-maintenance. The hot-swap capability allows individual sensors to be replaced during operation – without interrupting the measurement processes.

The sensor cubes thus represent a forward-looking alternative to insertion technology, particularly where digital process control and modular expandability are key requirements.

Product innovation

Type 8906 – online water analysis system

Modular. Intelligent. Low-maintenance.

The Type 8906 online water analysis system is a fully configurable system for measuring your water parameters, tailored to suit your needs. The flexible EDIP platform enables the integration of the Bürkert sensor cubes as well as all commercially available sensors. The efficient device integration platform (EDIP) is an electronics assembly module platform by Bürkert that enables high flexibility with its combination of hardware and software modules. Other modules, like gateway ME43 (Profinet, Ethernet/IP, Modbus TCP, OPC UA), I/O module ME44 and mobile gateways allow unlimited data exchange between the online water analysis system and other systems (PLC, SCADA, Cloud etc.).

- Continuous analysis
- Modular cube and backplane technology
- Fieldbus connection for versatile industrial communication
- Compact and clearly structured design
- Long service life thanks to MEMS technology



Did you know?

The secret of the online water analysis system lies in the combination of modular cube and backplane technology with innovative MEMS measurement technology.



Water analysis configured in accordance with customer's requirements



Real-time data available



Increased flexibility



Extremely low maintenance



Visit our eShop

➔ Type8906

pH



Type MS01

- Fully compatible with bÜS systems and a wide range of other analysis sensor cubes
- Sensor: MEMS ISFET technology
- Hot-swap facility for exchanging the sensor cube during operation
- Minimal sample water consumption
- Available in 2 variants: standard and with drinking water approval (ACS)



TYPE MS01

pH sensor cube

Type MS01 is a pH sensor cube for the Type 8906 online analysis system. It uses an ISFET measuring cell based on MEMS (micro-electro-mechanical system) and is operated directly on the fluidic backplane. Communication and integration take place via the digital bÜS interface with automatic registration. Type MS01 is available in two versions: Standard with anti-fouling protection (for chlorine-free water) and drinking water variant without anti-fouling equipment – for applications with drinking water approval.



Reliable pH measurement



Plug & play via bÜS



Anti-fouling protection available



Compact

Chlorine



Type MS02

- Fully compatible with bÜS systems and a wide range of other analysis sensor cubes
- Optional pH-compensated chlorine measurement
- Hot-swap facility for exchanging the sensor cube during operation
- Minimal sample water consumption
- MEMS technology sensor



TYPE MS02

Sensor cube for chlorine (Cl₂) or chlorine dioxide (ClO₂)

Depending on the variant, the MS02 sensor cube measures the available or free effective chlorine or chlorine dioxide in the water. It operates within the Type 8906 online analysis system on a fluidics backplane. The membrane-covered amperometric measuring cell is based on Bürkert MEMS technology. Optional combination with the pH sensor MS01 enables free chlorine to be precisely determined. The cube automatically registers via the bÜS interface. A variant with an external KCl reference electrode for fluctuating conditions is available.



Precise measurement



Plug & play via bÜS



Compact



Also suitable for unstable conditions

Conductivity



Type MS03

- Fully compatible with bÜS systems and a wide range of other analysis sensor cubes
- Resistive 2-electrode cell
- Hot-swap facility for exchanging the sensor cube during operation
- Minimal sample water consumption



TYPE MS03

Conductivity sensor cube

The MS03 sensor cube measures the conductivity in water and is operated on the fluidics backplane within the Type 8906 online analysis system. Conductivity serves as an indicator of the concentration of dissolved substances, the water quality, and changes in the treatment process. The cube is connected electrically and fluidically via the system backplanes. It automatically logs into the system via the bÜS interface. Parameterisation is user-guided after plugging in.



**Meaningful
conductivity analysis**



Plug & play via bÜS



Compact



**Individual
parameterisation**

ORP



Type MS04

- Fully compatible with bÜS systems and a wide range of other analysis sensor cubes
- Hot-swap facility for exchanging the sensor cube during operation
- Minimal sample water consumption
- Available in 2 variants: standard and with drinking water approval (ACS)



TYPE MS04

Redox sensor cube

The MS04 sensor cube measures the redox potential in water and is operated on the fluidics backplane of the Type 8906 online analysis system. The redox value is a key water parameter that indicates the activity of a disinfectant in the water, i.e. the remaining effective residual. The cube is integrated via bÜS with automatic registration. Two variants are available: standard with anti-fouling protection for chlorine-free water, and the drinking water variant without anti-fouling for applications with drinking water approval.



**Reliable redox
measurement**



Plug & play via bÜS



**Anti-fouling
protection available**



**Low water
consumption**

Turbidity



Type MS05

- Fully compatible with bÜS systems and a wide range of other analysis sensor cubes
- Optical sensor in accordance with DIN EN ISO 7027 or optionally EPA method 180.1
- Hot-swap facility for exchanging the sensor cube during operation
- Minimal sample water consumption
- With moisture monitoring for permanently stable turbidity measurement



TYPE MS05

Sensor cube for turbidity measurement

The MS05 sensor cube measures turbidity in accordance with DIN EN ISO 7027 or EPA 180.1. It can be operated on a fluidic backplane in the Type 8906 online analysis system. Type MS05 detects unwanted undissolved substances in water and is suitable for monitoring filter effects and optimising backwashing processes. The sensor cube communicates via the bÜS interface. It registers automatically when plugged in and can be parameterised according to customer requirements.

	Meaningful data		Plug & play via bÜS
	Compact		Individual parameterisation

Iron



Type MS06

- Fully automated water sampling with adjustable analysis interval
- Miniaturised for a compact system design
- Economical use of reagents
- Fully compatible with bÜS systems and a wide range of other analysis sensor cubes



TYPE MS06

Flow injection analysis (FIA) sensor cube for iron content

This miniaturized FIA sensor cube, Type MS06, for photometric online determination of iron ($\text{Fe}^{2+}/\text{Fe}^{3+}$) in the Type 8906 analysis system combines the necessary components in the smallest space. Using microfluidic components, the reagent is precisely dosed and mixed with the water sample before the absorption is measured in the photometer. The measured iron content is then available for the control, monitoring and documentation of the water treatment. Integration is done via bÜS with automatic registration.

	Continuous measurement		Minimal space requirements
	FIA first-time use as field equipment		Individual parameterisation

Accessories



Type MZ15

- On demand, on-site cleaning or calibration of sensors
- Compliance with individual quality standards and guidelines
- Reliable and precise measurements, long-term
- Flexible deployment allows economical and thus easy on-site quality management



TYPE MZ15

Manual calibration and cleaning module

The handy and user-friendly calibration and cleaning module Type MZ15 makes it easy to perform minor operator interventions in the field, such as cleaning or calibration sensors. As an accessory within the Type 8906 online analysis system, it increases system flexibility and helps ensure cost-efficient and time-saving operation. The manual module provides a simple way to meet specific in-house operational quality standards.

 Cleaning/calibration as required	 Simple and handy
 Flexible installation options	 Improved measurement stability



Type MZ20

- Fully automatic cleaning for MSxx series sensor cubes
- Prevents deposits in the system and sensor cubes for long-term stable measurements
- Different cleaning solutions for organic and inorganic soiling
- Application-specific cleaning sequence with flexible configuration



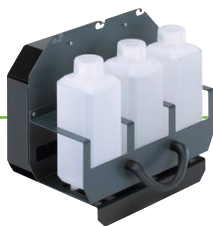
TYPE MZ20

Cleaning system

Type MZ20 is an automatic cleaning system for sensor cubes in the Type 8906 analysis system. In conjunction with the ME24 control module, fluidics and sensor surfaces are cleaned with up to two cleaning liquids, in a time-controlled and/or parameter-controlled manner.

The settings are made via the 7" touchscreen or the Bürkert Communicator. The manual cleaning workload is reduced, and the long-term stability of the measurements is significantly increased.

 Workload reduction	 Adjustable parameters
 Maintenance-free (except for changing the container)	 Improved measurement stability



Type MZ30

- Module for storing and monitoring the reagents for the fully-automatic operation of the flow injection analysis modules
- Monitors reagent levels and alerts users in good time when replacement is required*
- Checks the correct reagent type and storage life*
- Fully EDIP-compliant for easy system integration* * Only applies to devices with barcode readers and weight sensors (product with electronics).



TYPE MZ30

Reagent unit

The reagent unit of the Type 8906 system supplies the flow injection analysis with up to three reagents, which are stored in the bottle holder. An integrated barcode reader checks correct product placement and expiration date. A notification indicates faulty or empty bottles, while the level is detected via weight. The unit can be installed in the system housing or in the analysis cabinet. Barcode recognition is not possible when used without electronics. The level is calculated via the pump function.

 Automatic reagent recognition	 Timely refill notification
 Seamless system integration	 Safe process monitoring

Technology innovation

Microsensors

As the demand for process information grows and more functions are integrated into devices, space becomes a key factor. Our compact, highly integrated systems address this need directly. With our innovative microsensor technology, we can take your devices and processes to a new level. We measure conductivity, ISE (specific ions such as Ca^{2+} , K^{+} , Mg^{2+}), pH value, chlorine, turbidity and continuous flow with exceptional precision within the confines of just a few millimetres.

Typical advantages resulting from the use of microsensors include:

- Analysis of incoming water quality to identify any need for additional water treatment steps
- Subjecting the dialysate mixture to a two-stage conductivity measurement to ensure that acid concentrate and bicarbonate concentrate are mixed in the correct ratio
- Measurement of ion concentration for process optimisation
- Process monitoring to detect, for example, changes in media composition and leaks.



Prototype ISFET sensor



Prototype conductivity sensor

Did you know?

Working closely with you, we tailor our prototypes precisely to your application – from materials and connections to form factor, measuring range and beyond.

We're here to help! Feel free to reach out to us at:

 microsensors@burkert.com



Flexible adaptation to your requirements



Ideal fit within your device



Extremely compact design



Continuous measurement and documentation

Dosing

Mass flow rate (gas or liquid)

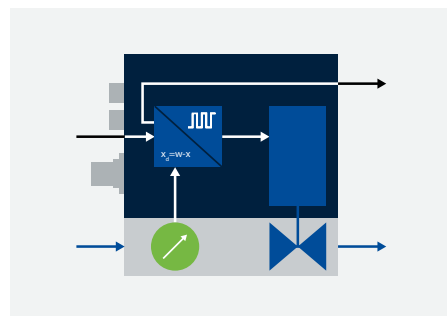
This advanced flow measurement technology is based on a physical principle (Coriolis) that occurs when a medium is accelerated within an oscillating system – enabling highly precise and direct measurement of mass flow. Thanks to this method, the sensors are suitable for almost all types of gases and liquids, regardless of their properties.

The Bürkert Coriolis flow controller contains a measurement tube that is set into a sinusoidal oscillation. Detectors at the beginning and end of the measuring tube record the corresponding deflection at specific times. As soon as a liquid or gas flows through the tube, the tube is deflected at both ends with a phase shift. This phase shift is proportional to the mass flow rate and allows the mass flow rate to be deduced.

The Coriolis effect is independent of the conductivity of the medium and requires neither inlet nor outlet sections or specific flow profiles of the gases and liquids. The result provides not only precise flow data (via the phase shift) but also valuable information about the density (via the frequency) and temperature of the medium.

Features

- Very high accuracy
- Long-term stability
- Valves for fluids and gases
- Density and temperature measurement available



Volume flow rate (liquids)

A common method for measuring liquid flow rate is to use a constriction in the flow path. As the liquid flows through, the pressure drops – and this difference is used to calculate the flow rate.

The following simplified principles of fluid mechanics form the basis for flow measurement using the differential pressure method:

When measuring the flow rate using differential pressure, a constriction (e.g. an orifice) is used in the flow channel. If there is no flow rate, the pressure sensor in front of the orifice measures the same pressure as behind the orifice.

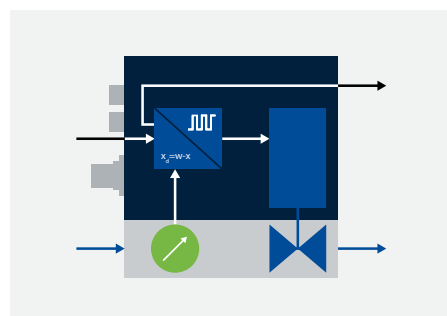
As soon as the medium starts flowing, the speed of the liquid increases as it passes through the aperture, resulting in a pressure drop behind the aperture, known as the Bernoulli effect.

$$\Delta P \sim Q^2$$

This differential pressure is proportional to the square of the volume flow rate.

Features

- High measurement dynamics
- Efficient





Type 8756

- Nominal flow rate range: 10 ml/min to 2,500 ml/min (for water)
- Nominal flow rate range: 20 IN/min to 2,000 IN/min (for nitrogen*)
- Suitable for gases and liquids (viscosity 0.3 to 1,000 mPas)
- Media-separated sensors, high-quality chemical-resistant parts
- Fieldbus and industrial Ethernet communication available
- High protection class – IP65



TYPE 8756

Mass flow controllers and flowmeters for gases and liquids

The MFC Type 8756 is the ideal solution for high-precision measurement and closed-loop control of gas or liquid flows – even in small quantities during batch processes. Thanks to the Coriolis-based measurement principle, it works completely independently of the medium. Changes in pressure or temperature do not affect the measuring accuracy, ensuring reliable results under all conditions.

In addition to the volume flow rate, the density and temperature of the gas or liquid can also be measured. The device is designed to enable stable flow measurement that is extremely robust against external vibrations.



Suitable for aggressive gases and liquids



High zero-point stability



Optional: USP Class VI, FDA, EC 1935 compliant



Very high accuracy and repeatability



Type 8752

- Nominal flow rate range: 15 ml/min to 900 ml/min (for water)
- Suitable for low viscosity liquids (0.4 to 4 mPas)
- Fieldbus and industrial Ethernet communication available
- High protection class – IP65



TYPE 8752

Liquid Flow Controller and flowmeter

The LFC Type 8752 uses a differential pressure cell to measure the fluid flow rate. By virtue of direct liquid contact and its measurement principle, the sensor offers high dynamic response for fast measurement and closed-loop control.

The LFC can be used with clean, neutral, low-viscosity liquids.



High accuracy and repeatability



Excellent price-performance ratio



Optional: USP Class VI, FDA, EC 1935 compliant



Conversion factor for liquids other than water

Technology innovation

Co-innovation: Bürkert & ReseaTech

Intelligent systems and sensors even for the smallest quantities of liquid.

When dosing or filling the smallest quantities of liquid, the requirements for chemical resistance, hygiene and repeatability are particularly high. At the same time, the demands for precise monitoring and documentation are increasing. This requires perfectly integrated sensors with minimal dead spaces, excellent dynamics and the highest precision.

To be able to precisely dose even the smallest amounts of liquid, Bürkert collaborates with the sensor technology specialist ReseaTech. The Swiss company was a spin-off from the Bern University of Applied Sciences in 2015. Bürkert now holds a majority stake in ReseaTech. ReseaTech is considered a technology leader in the measurement of very small volumes – starting from just 50 nanolitres.

This partnership has resulted in market-ready microdosing solutions that are used worldwide in medical, analytical and industrial applications. The combination of ReseaTech's high-precision flow sensors and Bürkert's system expertise in fluid management enables integrated, intelligent solutions for the most demanding applications.

Overview of sensor solutions

Pressure

Compact design in contrast to conventional pressure sensors, media-contacting materials exclusively PEEK and FFKM – ideal for aggressive media and tight installation spaces.

Flow rate

Based on the differential pressure principle, they precisely measure even the smallest quantities and enable seamless process monitoring.

Dosing

The μ LDC (Liquid Dosing Controller) doses the smallest amounts of liquid, less than 1 ml, in a closed control loop – for maximum safety and documentation.



Did you know?

Integration and system development All of these sensors are also available in variants that can be easily integrated into your devices upon request. This reduces complexity, space requirements and costs, while delivering maximum intelligence within your devices.



Compact



Optimum precision



Repeatability



Monitoring and documentation of values

Technology innovation

Dosing solutions

Dosing applications are common in almost all industries. When ingredients, additives, or flavourings are added, getting the dosing right is crucial. Precision and speed are essential to avoid additional costs. This places high demands on the upstream dosing system, which must guarantee a constant level of accuracy at all times.

In such applications, manual dosing is not reliable enough – and conventional solutions made from individual components also have their limitations. Even minimal differences in the viscosity of the dosing medium can quickly lead to inaccurate dosing.

As fluidics specialists, we took on this challenge and developed the μ LDC and the Coriolis MFC as a solution made from proven and perfectly matched standard components. Regardless of the primary pressure of the dosing medium, this solution ensures precise dosing. The speed of measurement is a critical success factor.

Both include a dosing sensor, a dosing valve and an electronic unit with software and a communication interface to enable integration into your process. This enables automatic and precise monitoring and control of the dosing process, combined with fast response times in the event of an error or process change.

Thanks to the diverse variants and modular design, the μ LDC and the Coriolis-MFC integrate seamlessly into your process – as a ready-to-use solution that requires minimal maintenance and does not require complex manual interventions or time-consuming training processes.



μ LDC

Liquid Flow Controller

Dosing range: 0.5 μ l to 50 ml*



8756

with batch controller

Dosing range: 50 ml to 1,000 ml

Would you like to learn more about our dosing solutions?

Contact us:

info@burkert.com



Maximum precision – even under changing dosing conditions



Simple start-up as plug-and-play solution with no need for teach-in



Sustainable use of expensive reagents



Monitoring and documentation of the dosing process

* Currently only available as a customised solution

Transmitters

A comprehensive range of sensors needs an equally broad range of suitable transmitters and controllers. Our electronics are the starting point for the process and ensure seamless connection to the control level.

Transmitters read, digitise, interpret and amplify all types of signals from our sensors (analogue or digital) and transform them into electronic data that is then available to both the operator on site and the automation system. Our controllers are at the heart of reliable control loops, whether they are mounted directly on the sensor, installed in a control panel, mounted on the wall or integrated into a control valve.



Type 8619

- Direct connection for compatibility with virtually all flow, pH/ORP value, chlorine and conductivity sensors
- Simple, intuitive user interface with a large graphics display, adjustable backlight (4 user-defined views)
- Hardware with expansion potential (up to 6 free slots)
- Industrial Ethernet (Modbus TCP, PROFINET or EtherNet/IP) optionally available
- Functionality extendable via optional software



TYPE 8619

multiCELL – multi-channel/multi-function transmitter/controller

The Type 8619 microprocessor transmitter/controller is available in panel-mounted or wall-mounted housing variants. Analogue and digital sensors can be connected directly, e.g. pH, ORP, conductivity, flow rate, pressure. It is ideally suited for use in water treatment or in food and pharmaceutical processes and provides optimal process control. It can be easily connected to many automation systems via Modbus TCP, PROFINET (conformity class B) or EtherNet/IP.



Wide range of applications



State-of-the-art open- and closed-loop control



Excellent modularity



Intuitive operation



Type 8611

- Continuous, 2-point, 3-point, and on/off control
- Ratio control
- Sensor inputs (4 to 20 mA, 0 to 10 V, frequency, Pt 100)
- Control of proportional, process, and motor valves
- Stored Bürkert proportional valves and flowmeters



TYPE 8611

eCONTROL – Universal controller

Type 8611 is a compact PI universal controller for the control of Bürkert sensors and proportional valves and all other control valves with standard signal (4 to 20 mA, 0 to 10 V or PWM output).

The actual value can be ascertained at one of the three analog inputs as a standard signal, frequency signal or signal from a Pt 100 resistance temperature sensor. The set-point value is specified via a standard signal or directly on the device. Ideal for flow rate or temperature control, also with cascade structure.



For very compact control systems



Universally compatible



For liquid and gaseous media



Cascade structure can be created



Type 8025

- Display for showing the flow rate and volume with two totalisers, or dosing quantity
- Automatic calibration via Teach-in
- Inputs (with batch controller) and all outputs can be checked without the need for actual flow
- Total and daily counters for quantity and number of dosing operations; volume or mass counter display (with dosing unit)



TYPE 8025

Flow transmitter/remote dosing device

The remote variant consists of a Type 8025 electronic module under a front cover or integrated into an IP65 body. The associated, separate flow sensor should be equipped with a pulse output signal, such as Bürkert Type 8020 or Type 8030 or a comparable product. The output signals are located on a terminal strip.



Compact or remote version



High tube nominal value range



Comprehensive measurement criteria



Practical fitting system

Level

Overview

As an integral component of process control, level measurement is used in numerous industries, each with its own specific requirements. There are level gauges for every type of liquid in containers of any geometry and at any temperature! The key to success is therefore comprehensive knowledge of sensor principles and control loops. Leverage our experience and expertise and let us support you in designing the installation and setting up the entire control loop of your system.



Radar

Non-contact measurement | Robust | Reliable

Page 51



Guided radar

For demanding media | For demanding process conditions | Different container sizes

Page 53



Tuning fork

Cost-effective | Easy installation | Robust

Page 54



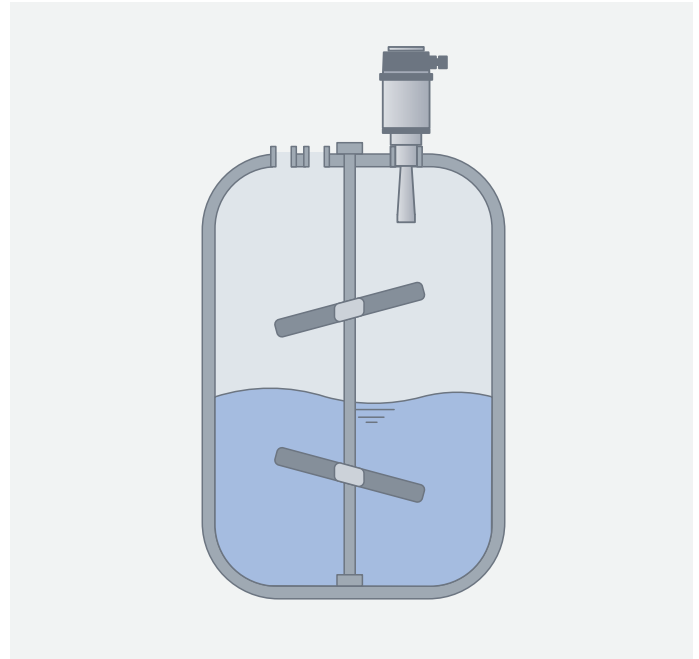
Float

Dirt-resistant | Cost-effective | Easy installation

Page 56

Radar

The radar transmitter consists of electronics in a housing, a process connection, an antenna and a sensor. The antenna emits short radar pulses towards the surface of the medium. The impulses are reflected at the surface, the echoes are received by the antenna, and the radar waves propagate at the speed of light. The time of flight between sending and receiving a pulse is measured and is directly proportional to the distance from the sensor to the medium surface and thus to the level. The determined level is converted into an output signal and transmitted as a measured quantity.



Type 8131

- Suitable for simple applications, such as water treatment, storage tanks and small silos
- Continuous filling level measurement up to 20 m, 4...20 mA, 2-wire
- Available process connections: thread (G, NPT, R 1½")
- Excellent radar signal focusing and high measurement dynamics
- Adjustable via Bluetooth



TYPE 8131

Radar level measuring device for liquids and bulk materials

Type 8131 is a non-contact radar level measuring device for continuous measurement of liquids and bulk solids in simple applications – e.g. in storage tanks, small silos or open containers. The device is available in 1½" with G, NPT or R connector and includes an integrated plastic antenna. Thanks to excellent signal focusing and high measurement dynamics, it delivers reliable results even in narrow or tall containers or in the event of signal attenuation, e.g. due to foam formation.



**Non-contact
measurement**



**For liquids and
bulk materials**



**Not sensitive to signal
interference**



Compact



Type 8140

- Continuous filling level measurement up to 120 m, 4...20 mA, 2-wire
- Available process connections: mounting bracket, thread (G, NPT ¾ and 1½), flange (DN50, 2" ASME), clamp (2")
- Excellent radar signal focusing and high measurement dynamics
- Adjustable via the display/configuration module and keys, alternatively via Bluetooth



TYPE 8140

Radar level measuring device for liquids and bulk materials

Type 8140 is a non-contact level measuring device for aggressive media or hygienic applications. The device is available with various antennas, connection types and sizes: for level measurement in small containers, in open channels or in bodies of water, and at high temperatures and pressures. For hygienic requirements, the variant with an encapsulated antenna system (clamp connection) is ideal. Excellent signal focusing ensures reliable measurement even under less than optimal conditions.

 Non-contact measurement	 Also suitable for aggressive media
 Variants for a wide range of requirements	 Not sensitive to signal interference

Guided radar

High-frequency microwaves are guided along a steel cable or a rod. As soon as the microwaves reach the product surface, they are reflected and received by the sensors. The times of flight are processed and the distance is output as a measured value. Time-consuming medium settings are not required. The instruments are preset to the ordered probe length.



Type 8188 + Type 8189

- Universal level measuring device for measurement in liquids
- Separation layer measurement of liquids
- Resistant to dust and steam
- 4...20 mA/Hart, 2-wire
- ATEX/IECEx certification



TYPE 8188 + TYPE 8189

Level measuring device with guided radar

The Type 8188 and Type 8189 level gauges enable continuous, precise measurement in liquids for a wide variety of process engineering applications. With measuring ranges up to 75 m, Type 8188 is ideal for tall containers. Even with steam, density fluctuations or condensate, the measurement remains reliable. Type 8189 differs in its hygienic stainless steel rod (1.4435, Ra < 0.76 µm) and is specifically designed for applications in the food and beverage industry as well as the pharmaceutical industry.



Precise level measurement



Stable under challenging conditions



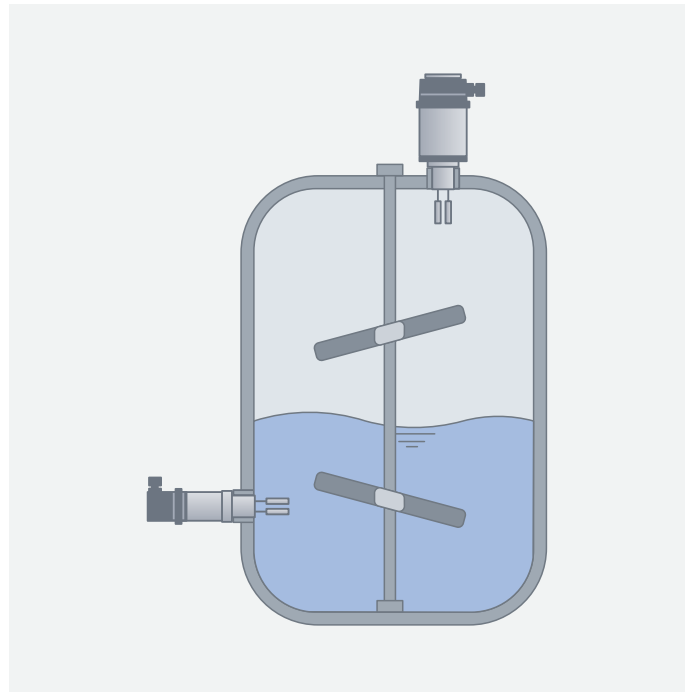
Hygienic design



Certified safety

Tuning fork

The tuning fork is piezoelectrically excited and oscillates at a mechanical resonant frequency. When the vibrating fork is immersed in the product, its frequency changes. This change is detected by the integrated oscillator and converted into a switching command.



Type 8110

- For general applications such as level detection or run-dry protection
- Installation without adjustment of settings
- Minimum installation dimensions
- Available as IO-Link variant



TYPE 8110

Vibration level switch

Type 8110 is a vibration-based level switch for liquids. With its compact vibrating fork (40 mm), it is suitable for applications such as overflow or dry-running protection in containers, tanks or pipes. The robust measurement principle is resistant to different chemical properties and works reliably even in turbulence, air bubbles, foaming, adhesions or external vibrations. The IO-Link interface (V1.0) enables bidirectional data transfer with any IO-Link master.



**Compact with 40 mm
tuning fork**



Simple start-up



**Not sensitive to
interference**

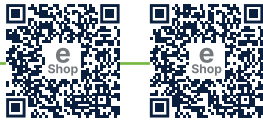


**Suitable for all liquid
types**



Type 8111/Type 8112

- For general applications such as level detection or run-dry protection
- Installation without adjustment of settings
- For the food, beverage and pharmaceutical industries with surface roughness < 0.8 µm
- ATEX approvals



TYPE 8111/TYPE 8112

Vibration level switch/ with extension tube

Type 8111 is a vibration-based level switch with a robust tuning fork (various lengths available) for liquids.

It is suitable for applications such as overflow or dry-run protection – even in potentially explosive atmospheres. The robust system works reliably in turbulence, air bubbles, foaming, adhesions or changing fill material – regardless of media properties.

Type 8112 also has an extension pipe. The immersion depth can be adjusted using a locking screw.



**Also suitable for
flammable media**



Low-maintenance



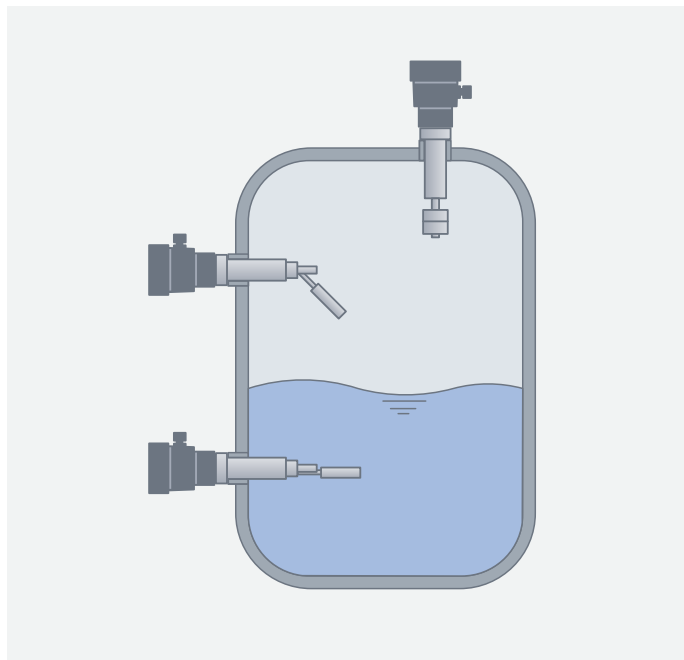
Robust tuning fork



**Flexibility thanks
to extension tube**

Float

The float's position changes in response to the liquid. An integrated permanent magnet in the float generates a constant magnetic field that switches a reed contact depending on the float position. A mechanical stop on the float switch prevents the float from rising further as the water level continues to rise, thus preventing the contact from being interrupted and the switching status from changing. The float only leaves the switching position when the level drops below the stop again.



Type 8181

- Switch for neutral and aggressive liquids
- Normally open contact/ Normally closed contact, changeover contact
- Reed contact
- Vertical or horizontal installation
- Pressed-in strands (Type 8181) or cable (Type TCL001)



TYPE 8181 Level float switch

Type 8181 is a compact float switch with hermetically sealed reed contacts, available as changeover or normally open/normally closed variants. The switching is achieved magnetically via a movable float. The switch is resistant to dirt, and the device is suitable for neutral and aggressive liquids. Type 8181 is simply installed laterally into the container via a cylindrical thread. Variants are available in PP or stainless steel, and for horizontal or vertical installation.



Dirt-resistant



Also suitable for aggressive liquids



Easy installation



**Material options:
PP or stainless steel**

Pressure

Based on numerous applications, we have compiled a product range of pressure sensors that are suitable not only for the measurement task but also for complete control loops and for customized system solutions. Our customers' applications are supported by a full portfolio of pressure switches and transmitters, characterised by robustness, long service life and accuracy. The design and materials of the devices allow deployment across almost all purity, viscosity and temperature conditions, in standard as well as hygienic environments.



Type 8316

- Ceramic/thick film measuring cell
- 2-wire variant for 4...20 mA output
- Compact, stable construction for the highest operational reliability



TYPE 8316 Pressure meter

The Type 8316 compact pressure meter fulfils the most stringent requirements in terms of mechanical load capacity, EMC properties and operational safety. It is particularly suitable for demanding industrial applications. For aggressive media against which stainless steel is not resistant, process connections in PVDF are available.



Compact



Highly reliable



Mechanically highly resilient



PVDF process connections available



Type 8325

- Available with hygienic flush diaphragm
- Housing and product contact parts in corrosion-resistant stainless steel
- Standard signal 4...20 mA for connection to automation systems
- Plug for fast installation and service
- Many pressure ranges available



TYPE 8325

Pressure transmitter for general applications, 0...25 bar

Designed for industrial use, Type 8325 is a compact, robust pressure transmitter suitable for pressure measurement applications up to 25 bar. With its high accuracy, fully welded stainless steel measuring system and no sealing elements, it is suited to numerous applications – even where aggressive media are concerned. Many other pressure ranges are available. Variants with an accuracy of 0.125%, and other output signals, electrical or process connections are available upon request.



Compact



Precise



Robust



For diverse measuring media



Type 8312

- Ceramic thick film or metallic thin film strain gauge measurement principles
- Process connections: G, NPT in 1/4" or G 3/4" (with hygienic flush diaphragm) or 1 1/2" clamp
- Linearised and temperature-compensated measuring ranges from -1 to 5 bar or 0 to 0.25 bar to 0 to 16 bar selectable, relative pressure
- Media temperature range depends on the measurement principle: -20 to +85 °C (ceramic), -40 to +125 °C (metal)
- Access to measured value, device status and settings via the CANopen interface



TYPE 8312

Pressure transmitter with CANopen interface

Type 8312 measures relative pressures (optionally also absolute pressures) in liquids and gases. The pressure transmitter is available with either a metallic thin-film strain gauge or a ceramic thick-film strain gauge. Depending on the system, different measuring ranges, temperature ratings and connection options are available to suit individual requirements. The pressure value is digitised and output via CANopen (CAN slave) – ideal for integration into PLC systems or via gateway.



Digital data output (CANopen)



Thin- or thick-film strain gauges



Variants to suit numerous applications



Optional: Absolute pressures



Type 8318

- Metallic thin film strain gauge measurement principle
- Process connections: G, NPT in 1/4", G 3/4" with hygienic flush diaphragm or clamp according to DIN 32676
- Measuring ranges for relative pressure from -0.4 to +0.4 bar up to -1 to +12.0 bar
- Available switching functions: PNP or NPN
- Access to measured value, device status and settings via IO-Link interface



TYPE 8318

Pressure transmitter with IO-Link interface

The IO-Link pressure transmitter measures relative or (optionally) absolute pressure in liquids and gases. The sensor signal is amplified, digitised and transmitted bidirectionally via IO-Link (V1.1) – for process data, status, diagnostics and parameterisation. Data transfer is possible with any IO-Link master; data access is via IODD. Two configurable digital outputs (PNP/NPN) are available. LEDs indicate operating state and the IO-Link connection.

 Pressure measurement and monitoring	 Suitable for liquids and gases
 Digital IO-Link communication	 LED status indicator

Temperature

Temperature is often cited as the most regulated process measurement parameter. We support our customers in controlling the temperature of their heating or cooling systems. Our portfolio of temperature sensors, switches and transmitters gives you complete peace of mind. All temperature measurements are based on Pt 100 or Pt 1000 sensor elements, offering the long-term reliability demanded by industrial processes. The stainless steel construction means that the devices can be used with media of virtually all purity levels, viscosities and pressures.



Type TST001

- With transmitter
- Wide range of applications for neutral media and aggressive liquids
- Welded in accordance with DIN IEC751



TYPE TST001

Resistance thermometer Pt 100

The temperature is measured using a 1xPt100 resistance thermometer in a stainless steel tube. The measuring insert is welded in accordance with DIN IEC751 and cannot be replaced. Type TST001 is chemically resistant, thus minimising the risk of oxidation and other chemical influences.



High precision



Outstanding
long-term stability



Chemically resistant



High reproducibility



Type 8412

- Single resistance thermometer Type Pt 1000
- Process connections: G ½" or NPT ½"
- Temperature measurement range: -50 to +150 °C
- Limit value monitoring function
- Access to measured value, device status and settings via the CANopen interface



TYPE 8412

RTD temperature sensor with CANopen interface

Type 8412 is a resistance thermometer with a Pt1000 element (Class A) for measurement in liquids and gases. The robust design offers reliable sealing under negative or overpressure. The measured value is digitised and output via CANopen (CAN slave) – for bidirectional data transfer to PLC or gateway CAN/Ethernet. The sensor is bÜS-compatible and can be parameterised via the Bürkert PC tool Communicator. Useful auxiliary functions have been implemented via the DS 404 device profile.

 Digital data output (CANopen)	 Suitable for liquids and gases
 Pressure-tight & robust	 bÜS-compatible



Type 8418

- Single resistance thermometer Type Pt 1000
- Process connections: G ½", clamp DN 10/20 compliant with DIN 32676
- Temperature measurement range: -50 to +150 °C
- Available switching functions: PNP or NPN
- Access to measured value, device status and settings via IO-Link interface



TYPE 8418

RTD temperature sensor with IO-Link interface

The IO-Link temperature sensor measures temperatures precisely using a resistance thermometer. The sensor signal is amplified, digitised and transmitted bidirectionally via IO-Link (V1.1) – for process data, diagnostics, status messages and parameterisation. Data transfer is possible with any IO-Link master; data access is via IODD. Two configurable digital outputs (PNP/NPN) are available. LEDs indicate operating and connection status.

 For measurement and monitoring	 High precision
 Digital IO-Link communication	 LED status indicator

Customisation & development

THE BÜRKERT SYSTEMHAUS FACILITIES
ARE RESPONSIBLE FOR THE EFFICIENT,
INNOVATIVE AND COST-EFFECTIVE
DEVELOPMENT OF YOUR FLUIDIC SOLUTIONS





Our state-of-the-art Systemhaus facilities specialise in developing fluidic assemblies and solutions according to your precise requirements. A motivated and dedicated team of sales consultants, industry specialists and engineers will work hand in hand to make your project a success – with every aspect of the process under one roof! All of our production infrastructure is located on site, which allows us to respond quickly and flexibly. This combination and concentration of expertise and resources in one place translates into huge gains in efficiency and quality for you.

Why choose Bürkert as your solution partner?

- Interdisciplinary collaboration between Bürkert experts ensures seamless communication and prevents loss of information – for exceptionally efficient processes.
- All process steps, ranging from development, prototype assembly and tool construction through to production, take place in one location – for fast-paced development and seamless quality.
- We don't think in terms of narrowly defined industry contexts; we are always exploring new possibilities with regard to handling liquids and gases – for new, original solutions that surpass the standards in your industry.
- We will use suitable system platforms for your individual solution – for a short time to market and significant cost savings.

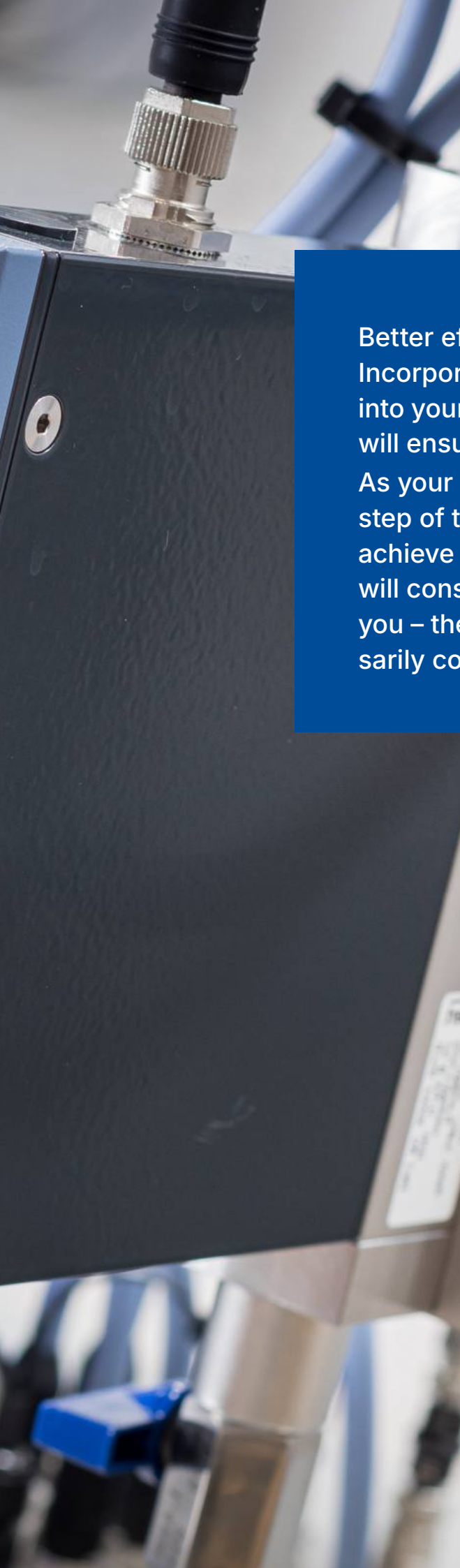
With our extensive capacity and full range of services, we will take responsibility for as much of the development process as you want us to and will coordinate all interfaces in order to provide pioneering, integrated solutions.



Automation & digitalisation

FLEXIBLE, NEUTRAL, COMPLETE: OUR
APPROACH TO FIND THE BEST SOLUTION





Better efficiency, quality and cost-effectiveness: Incorporating optimised automation and digitalisation into your processes, applications and fluidic challenges will ensure that you stay ahead of the competition. As your expert partner, Bürkert will support you every step of the way. Our priority is to make sure you achieve the best possible results. This means that we will consider different manufacturers when advising you – the components we recommend won't necessarily come from us.

Why choose Bürkert as your solution partner?

- We understand your processes, applications and challenges – and will use these insights to develop automation solutions perfectly tailored to your tasks.
- Our advice is neutral and objective – which gives us the freedom to truly find the perfect solution for you.
- Our experts will use innovative approaches and select creative solutions to keep you one step ahead of the competition.
- Unlike other partners, we are not just here to supply components – we will work with you to ensure your success by means of a complete automation and digitalisation concept.
- If you wish, we can take care of the concept, planning and implementation – all from a single source. You won't have to worry about interfaces, compatibility or fine tuning.

When it comes to finding the best solution, we always give 100% – whether you want to assign individual subtasks to us or entrust us with the entire automation and digitalisation process from initial advice right through to start-up.

Calibration services for sensors

Ensure the measurement accuracy of your sensors – we calibrate or adjust your flow, pressure, temperature and analysis sensors for a wide range of parameters.



Mechanical wear, aging of materials, temperature changes and frequent use can significantly affect the measuring accuracy of your sensors. Measuring devices must therefore be calibrated regularly to ensure precise measurement results at all times.

Error values can drastically affect the safety of production processes or the quality of your products. Moreover, they can lead to increased energy consumption and consequently to increased costs. Regular calibration minimises the risk of failure and ensures your product quality.

The frequency of calibration depends on various factors, including the type of sensor, its frequency of use and the specific application requirements.

Whether flow, pressure, temperature or analysis sensors – our service team carries out calibrations according to ISO 9001 or ISO 17025 (DAkkS) on your sensors, irrespective of the manufacturers, giving you the advantage of comprehensive and tailored services.

**On-site
calibration and
adjustment**

**Factory
calibration and
adjustment in
the laboratory**

**Order a
replacement
device**

**Rent
calibration
equipment**

**Concluding
a service
contract**



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and other services:**

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Bürkert Fluid Control Systems
Christian-Bürkert-Strasse 13-17
74653 Ingelfingen
Germany

Telephone: +49 7940 10 0
info@burkert.com

burkert.com

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