bürkert
FLUID CONTROL SYSTEMS

Oval rotor low flow sensor

- For highly viscous fluids
- Value indication, monitoring, transmitting, On/Off control and batch control in combination with different transmitters

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

Type 8025 ▸
Insertion flowmeter or batch controller with paddle wheel and flow transmitter or remote batch controller

Type 8692 ▸
Digital electropneumatic Positioner for the integrated mounting on process control valves

Type 8619 ▸
multiCELL - Multi-channel and multi-function transmitter/controller

Type description

This sensor is specially designed for measurement or batch control of highly viscous fluids like glue, honey or oil. It allows an easy connection to transmitters like types 8025 and 8619 for more functionality.

The design of this low flow sensor is based on the oval rotor principle. This has proven to be a reliable and highly accurate volumetric method of measuring flow. Exceptional repeatability and high accuracy over a wide range of viscosities and flowrates are features of this design.
The low pressure drop and high pressure rating make it suitable for gravity and pump (in-line) applications and many others.

All sensors provide Open Collector NPN frequency output and frequency output on Reed contact via 1-meter 5-wire cable.

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Visit product website ▸

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1. General Technical Data

Product properties	
Material	
Please make sure the device materials are compatible with the fluid you are using. Detailed information can be found in chapter "3.1. Chemical Resistance Chart – Bürkert resistApp" on page 4.	
Non wetted parts	
Screws	Stainless steel 316
Tag plate	Aluminium
Wetted parts	
Body, cap	PPS
Oval gear	PPS
Shaft	Alloy C
Seal	FFKM
Dimensions	Detailed information can be found in chapter "4. Dimensions" on page 5.
Measuring principle	Oval gear
Compatibility	With 8025 Universal transmitter/batch controller, 8611 eCONTROL Universal controller or 8619 multiCELL transmitter/Controller Detailed information can be found in the respective technical data sheets, see **data sheets Type 8025 ▶, Type 8611 ▶, Type 8619 ▶** for more information.
Measuring range	0.5…500 l/h (0.13…132 gph) (depends on the version)
Type of sensor	Hall effect (Transistor output) or Reed contact (reed switch outpu)
Standard K-factor	• For flow range 0.5…120 l/h: 1000 pulses/l • For flow range 15…500 l/h: 400 pulses/l
Performance data	
Measurement deviation	±1 % of measured value
Repeatability	≤0.03 % of measured value
Electrical data	
Operating voltage	4.5…24 V DC
Current consumption	≤9 mA (Hall effect sensor)
Output signal	
Hall effect sensor	• Frequency on open collector, NPN, max. 25 mA • 4.5…24 V DC • Recommended load: 1.8 KΩ Pull up at 24 V DC
Reed contact	• Frequency • Switching voltage: 30 V DC, • Max. current: 0.5 A
Media data	
Fluid temperature	-20…+80 °C (-4…+176 °F)
Fluid pressure	5 bar (72 PSI)
Dynamic viscosity η	1 Pa.s. max. (higher on request)
Maximum particle size	75 µm To prevent damage from dirt or foreign matter, we strongly recommend the installation of a 75 µm (200 mesh) strainer as close as possible to the inlet side of the meter.
Process/Port connection & communication	
Process connection	Thread ¼" (G or NPT)
Electrical connection	• 5-wire cable • 1 m length
Approvals and certificates	
Standards	
Degree of protection	IP54 (NEMA 13)
Directives	
CE directives	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure equipment directives	Complying with Article 4, Paragraph 1 of 2014/68/EU directive Detailed information on the pressure equipment directive can be found in chapter "2.1. Pressure Equipment Directive" on page 4.

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Environment and installation	
Ambient temperature	Operation and storage: -15…+80 °C (+5…+176 °F)
Relative air humidity	≤85 %, without condensation
Height above sea level	Max. 2000 m
Operating condition	Continuous
Device mobility	Fixed
Application range	Indoor and outdoor (protect the device against electromagnetic interference, ultraviolet rays and, when installed outdoors, against the effects of climatic conditions)
Installation category	Category I according to UL/EN 61010-1
Pollution degree	Degree 2 according to UL/EN 61010-1

2. Approvals

2.1. Pressure Equipment Directive

The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions:

Device used on a pipe

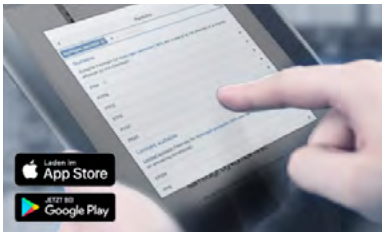
Note:

- The data in the table is independent of the chemical compatibility of the material and the fluid.
- PS = maximum admissible pressure, DN = nominal diameter of the pipe

Type of fluid	Conditions
Fluid group 1, Article 4, Paragraph 1.c.i	DN ≤25
Fluid group 2, Article 4, Paragraph 1.c.i	DN ≤32 or PS*DN ≤1000
Fluid group 1, Article 4, Paragraph 1.c.ii	DN ≤25 or PS*DN ≤2000
Fluid group 2, Article 4, Paragraph 1.c.ii	DN ≤200 or PS ≤10 or PS*DN ≤5000

3. Materials

3.1. Chemical Resistance Chart – Bürkert resistApp



Bürkert resistApp – Chemical Resistance Chart

You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

Start Chemical Resistance Check

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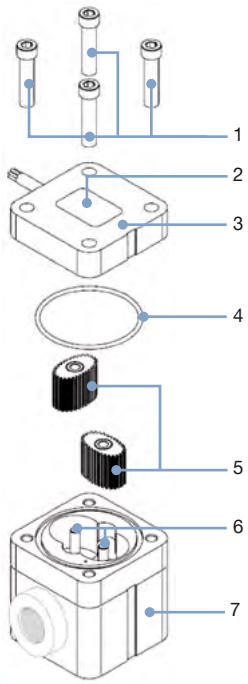
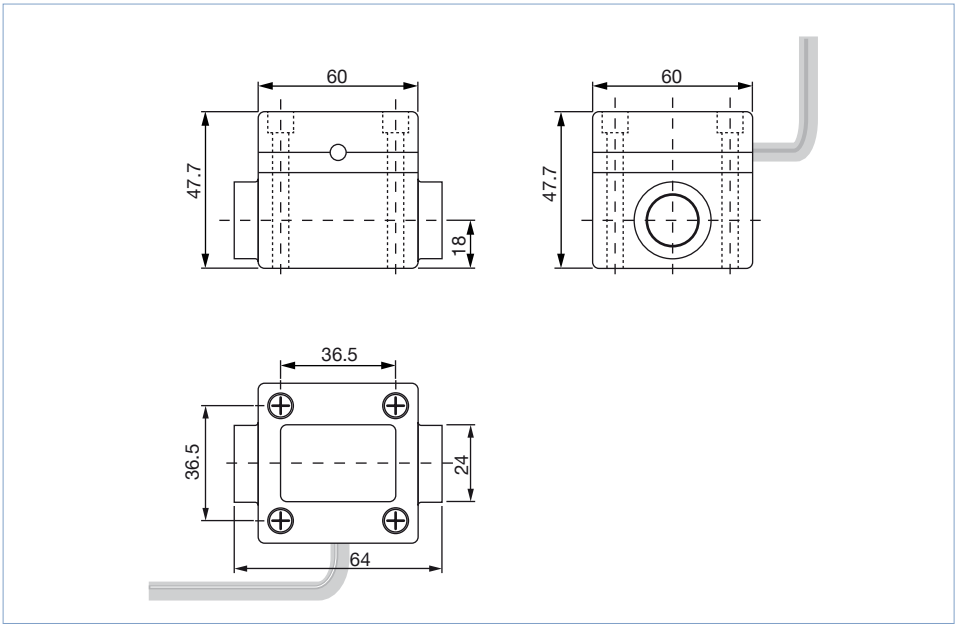
3.2. Material specifications



No.	ELEMENT	Material
1	Screws	Stainless steel 316
2	Tag plate	Aluminium
3	Cap	PPS
4	Seal	FFKM
5	Oval gear	PPS
6	Shaft	Alloy C
7	Body	PPS

4. Dimensions

Note:
Dimensions in mm



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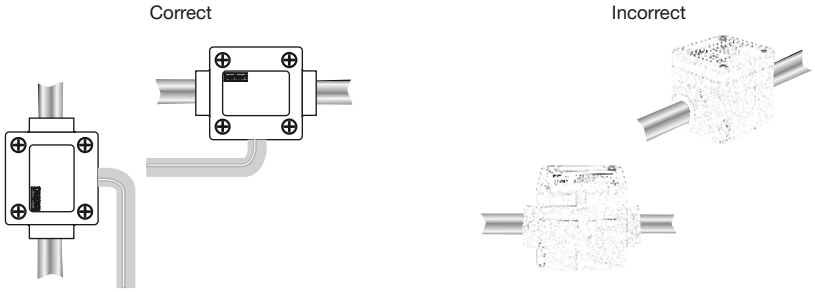
5. Product installation

5.1. Installation notes

The flowmeter is not designed for gas and steam flow measurement.

The flowmeter can be installed in any orientation as long as **the rotor shafts are always in a horizontal plane**.

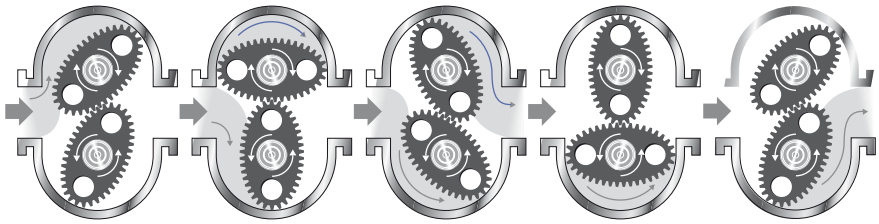


The pipe must be filled with liquid and free from air bubbles. Avoid air purge of the system which would cause damages and to prevent damage from dirt or foreign matter, we strongly recommend the installation of a 75 µm strainer as close as possible to the inlet side of the meter.

6. Product operation

6.1. Measuring principle

When liquid flows through the pipe, the rotors turn. This rotation produces a measuring signal in the associated hall sensor. The frequency and amplitude are proportional to the flow. The volume of the fluid being transferred in this way is exactly determined through the sensor geometry.



A conversion coefficient, specific to each meter size, enables the conversion of this frequency into a flow rate. The standard K-factor depending on the meter size is available in the **instruction manual of the flowmeter 8071** ▶.

7. Ordering information

7.1. Bürkert eShop – Easy ordering and quick delivery

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7.2. Bürkert product filter

Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements?
Use the Bürkert product filter and find suitable articles for your application quickly and easily.

Try out our product filter

7.3. Ordering chart

Process connection	Flow range		Body material	Max. pressure	Rotor/shaft material	Seal	Article no.
	>5 mPa.s	<5 mPa.s					
G ¼"	0.5…100 l/h (0.13…26.4 gph)	2[1.)]…100 l/h (0.53…26.4 gph)	PPS	5 bar	PPS / Alloy C	FFKM	432288
	15…500 l/h (4.00…132 gph)	40…500 l/h (10.56…132 gph)					430856
NPT ¼"	0.5…100 l/h (0.13…26.4 gph)	2[1.)]…100 l/h (0.53…26.4 gph)					448654
	15…500 l/h (4.00…132 gph)	40…500 l/h (10.56…132 gph)					448655

1.) For non-lubricating fluids = 6 l/hr (e.g. Water...)

7.4. Ordering chart accessories

Description	Article no.
Set of two rotors in PPS for measuring range 0.5…100 l/h	550921
Set of two rotors in PPS for measuring range 15…500 l/h	550922
FFKM seal	550959
Set of PPS cap with hall sensor and Reed contact	553654

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