



Positive displacement sensor fitting for continuous flow measurement

- DN 15...DN 100
- Inline Quarter-Turn Technology
- Electronics available for indication, monitoring, transmitting, On/Off control and batch control

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

Can be combined with



Type 8077 ▶
Flowmeter with oval rotors



Type SE30 ▶
Transmitter for Inline sensor fitting



Type SE32 ▶
Transmitter for Inline sensor fitting



Type SE35 ▶
Transmitter or batch controller for Inline sensor fitting



Type SE36 ▶
ELEMENT transmitter for Inline sensor fitting

Type description

This positive displacement sensor fitting is specially designed for flow measurement and/or batch control of highly viscous fluids like glue, honey or oil.

This measuring element must be associated to a transmitter SE30, SE32, SE35 or SE36 with hall sensor principle only, quickly and easily connected together by a Quarter-Turn.

The design of this fitting 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 that design.

The low pressure drop and high pressure rating make it suitable for both gravity and pump (inline) applications

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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.](#)

Wetted parts

Body	Aluminium, stainless steel 316L (1.4401)
Seal	FKM or FEP/PTFE encapsulated
Oval gears	Stainless steel 316L (1.4401)
Shaft	Stainless steel 316L (1.4401)
Dimensions	Detailed information can be found in chapter “4. Dimensions” on page 5.
Measuring principle	Oval gear
Compatibility	With transmitter SE30, SE32, SE35, SE36 with Hall sensor principle Detailed information can be found in the respective technical data sheets, see data sheets Type SE30 + S077 ▶, Type SE32 + S077 ▶, Type SE35 + S077 ▶, Type SE36 + S077 ▶ for more information.
Pipe diameter	DN 15...DN 100
Measuring range	<ul style="list-style-type: none"> • Viscosity >5 mPa.s: 2...1200 l/min (0.53...320 gpm) • Viscosity <5 mPa.s: 3...616 l/min (0.78...320 gpm)

Performance data

Measurement deviation	<ul style="list-style-type: none"> • With K-factor determined with a teach-in procedure or with the specific K-factor, engraved on the sensor fitting: $\pm 0.5\%$ of the measured value (at Teach-In flow rate value) • With standard K-factor: $\pm 1\%$ of the measured value
Repeatability	$\pm 0.03\%$ of the measured value

Medium data

Fluid temperature	With sensor fitting S077 in: <ul style="list-style-type: none"> • Aluminium: $-20...+80\text{ °C}$ ($-4...+176\text{ °F}$) • Stainless steel: $-20...+120\text{ °C}$ ($-4...+248\text{ °F}$)
Fluid pressure (max.)	With sensor fitting S077 with: <ul style="list-style-type: none"> • DN 15: 55 bar (798.05 PSI) (threaded process connection) • DN 25: 55 bar (798.05 PSI)^{1.)} • DN 40 or DN 50: 18 bar (261.18 PSI) • DN 80: 12 bar (174.12 PSI) • DN 100: 10 bar (145.1 PSI)
Viscosity	Max. 1 Pa.s (higher on request)
Rate of solid particles	0 %

Process/Port connection & communication

Process connection	<ul style="list-style-type: none"> • Thread: $\frac{1}{2}$"; 1"; $1\frac{1}{2}$"; 2"; 3" (G or NPT) • Flange: <ul style="list-style-type: none"> – 25; 40; 50; 80 or 100 mm DIN PN 16 flange – 1"; $1\frac{1}{2}$"; 2"; 3" or 4" ANSI 150LB flange
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Approvals and certificates

Directives

CE directives ^{2.)}	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.

Environment and installation

Ambient temperature	Operation and storage: $0...+60\text{ °C}$ ($+32...+140\text{ °F}$)
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1.) Or in accordance to the value of the used flanges.

2.) Without CE mark

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

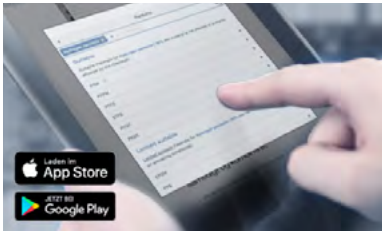
Note:

- 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

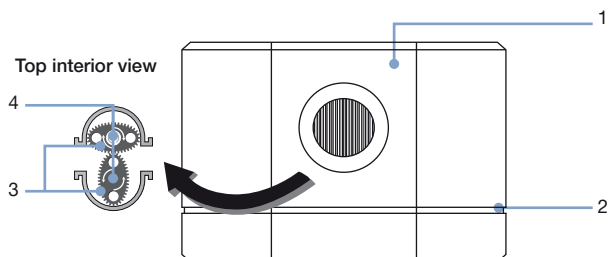


Bürkert resistApp – Chemical Resistance Chart

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](#)

3.2. Material specifications



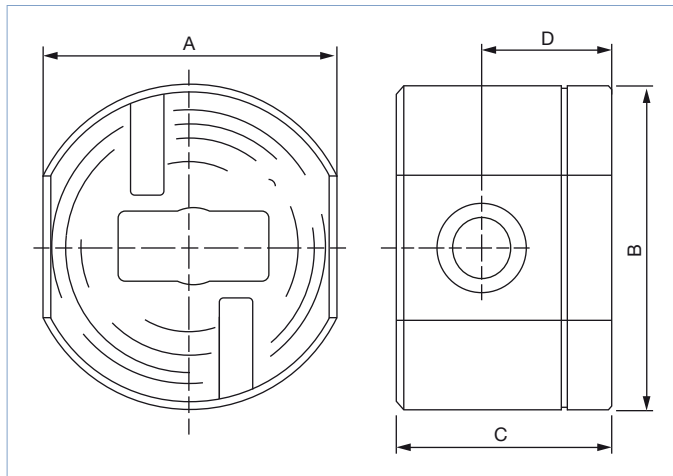
No.	ELEMENT	Material
1	Sensor fitting body	Stainless steel
2	Seal	FKM or FEP/PTFE encapsulated
3	Oval gear	PPS, aluminium or stainless steel (316L)
4	Axis	Stainless steel (316L)

4. Dimensions

4.1. Threaded connection

Note:

Dimensions in mm

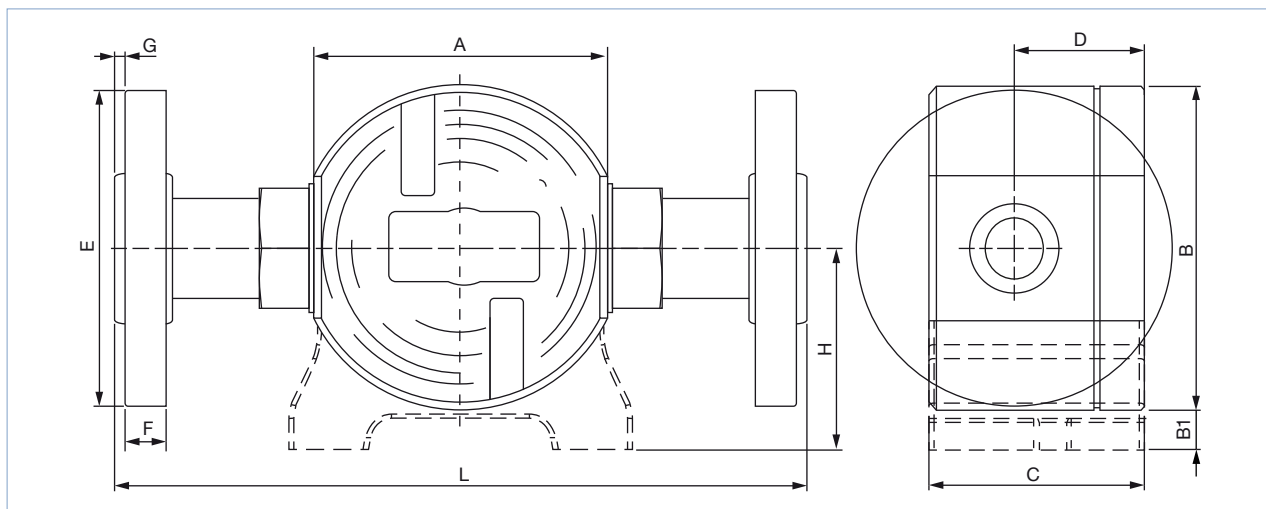


DN	A		B	C	D
	St. St.	Alu.			
15	81	81	87	49	28
25	100	100	112	75	45
40	120	120	137	103	61
50	140	140	163	124	72
80	260	302	220	180	80

4.2. Flange connection

Note:

Dimensions in mm



DN	A	B	B1	C	D	E				G		H	L					
						DIN		ANSI		DIN	ANSI		DIN	ANSI	Stainless steel		Aluminium	
						DIN	ANSI	DIN	ANSI						DIN	ANSI	DIN	ANSI
25	100	112	-	75	45	115	108	16.0	12.7	2	2	-	240	240	240	240		
40	120	137	-	103	61	150	125	16.0	15.9	3	2	-	240	240	240	240		
50	140	163	-	124	72	165	152	18.0	17.5	3	2	-	264	264	264	264		
80	-	226	28	180	78	200	191	20.0	27.4	3	1.6	141	344	348	435	435		
100	-	291	42	226	108	220	229	30.2	28.4	0	1.6	191	-	-	583	583		

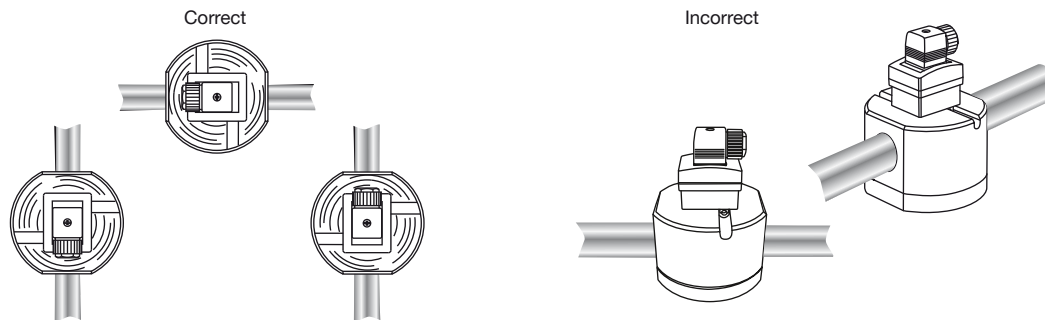
5. Product installation

5.1. Installation notes

Note:

- The following installation view uses a picture of a transmitter Type SE30 mounted on a sensor fitting Type S077, but applies to all versions of the Type S077 mounted with either transmitter Type SE32, Type SE35 or Type SE36.
- The positive displacement sensor fitting is not designed for gas and steam flow measurement.

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

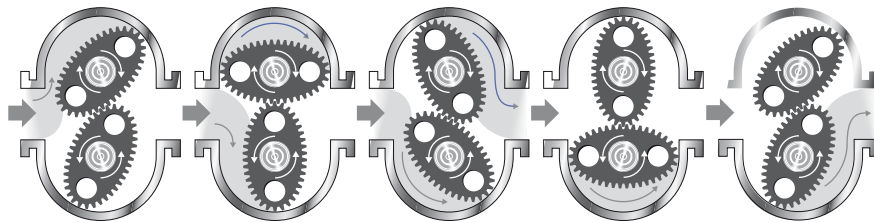


The pipe must be filled with liquid and free from air bubbles. Avoid air purge of the system which would cause damage and to prevent damage from dirt or foreign matter, we strongly recommend the installation of a 250 µm strainer as close as possible to the inlet side of the meter.

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.



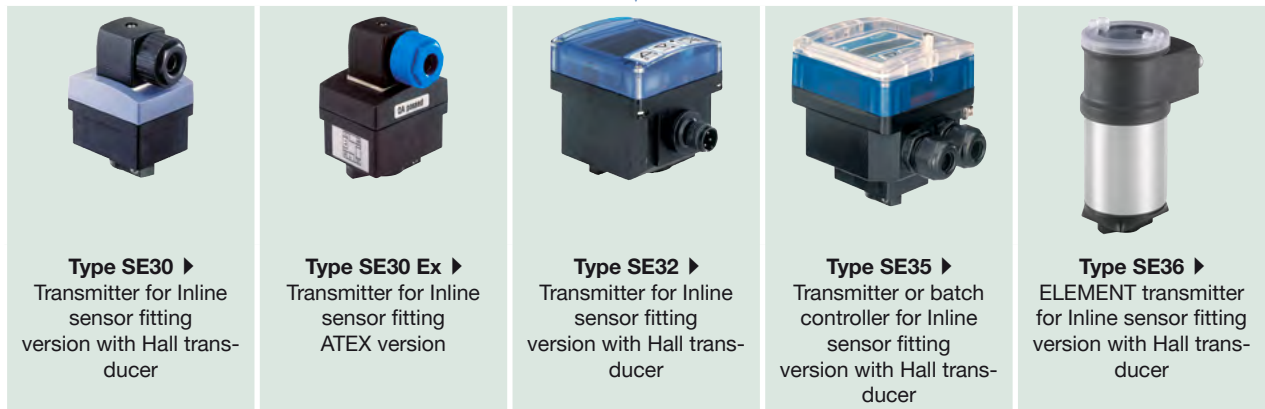
A conversion coefficient, specific to each meter size, enables the conversion of this frequency into a flow rate. The standard K-factor depending on the meter size is available in the **instruction manual of the sensor fitting S077** ▶. To improve the measurement deviation, a specific K-factor is given with each device on its label.

7. Networking and combination with other Bürkert products

Example:



Type S077



8. Ordering information

8.1. Bürkert eShop – Easy ordering and quick delivery



Bürkert eShop – Easy ordering and fast delivery

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8.2. Recommendation regarding product selection

A complete device to measure the flow rate is made up of a compact Inline sensor-fitting (S077) with oval gears and a transmitter (SE30, SE30 Ex, SE32, SE35, SE36).

See [data sheet Type SE30](#) ▶, [data sheet Type SE32](#) ▶, [data sheet Type SE35](#) ▶ or [data sheet Type SE36](#) ▶ for more information.

Two different components must be ordered in order to select a complete device. The following information is required:

- **Article no.** of the desired flow transmitter (see [data sheet Type SE30](#) ▶, [data sheet Type SE32](#) ▶, [data sheet Type SE35](#) ▶ or [data sheet Type SE36](#) ▶)
- **Article no.** of the selected S077 Inline sensor-fitting (see chapter “[8.4. Ordering chart](#)” on page 8)

8.3. 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](#)

8.4. Ordering chart

Orifice DN	Process connection	Flow range for fluid with viscosity		Material			Article no.	
		> 5 mPa.s	< 5 mPa.s	Body	Oval gear	Seal		
		[l/min]	[l/min]					
15	G ½"	2...30	3...25	Aluminium	PPS	FKM	567223	
	NPT ½"			Stainless steel	Stainless steel	FEP/PTFE	567224	
				Aluminium	PPS	FKM	567225	
				Stainless steel	Stainless steel	FEP/PTFE	567226	
25	G 1"	6...120	10...100	Aluminium	PPS	FKM	567227	
	NPT 1"			Stainless steel	Stainless steel	FEP/PTFE	567228	
				Aluminium	PPS	FKM	567229	
				Stainless steel	Stainless steel	FEP/PTFE	567230	
	25 mm DIN PN 16 flange			Aluminium	PPS	FKM	567231	
	1" ANSI 150 LB flange			Stainless steel	Stainless steel	FEP/PTFE	567232	
				Aluminium	PPS	FKM	567233	
				Stainless steel	Stainless steel	FEP/PTFE	567234	
40	G 1½"	10...250	15...235	Aluminium	PPS	FKM	567235	
	NPT 1½"			Stainless steel	Stainless steel	FEP/PTFE	567236	
		40 mm DIN PN 16 flange	Aluminium	PPS	FKM	567237		
			Stainless steel	Stainless steel	FEP/PTFE	567238		
	1 ½" ANSI 150 LB flange		Aluminium	PPS	FKM	567239		
		Stainless steel	Stainless steel	FEP/PTFE	567240			
	50	G 2"	15...350	30...300	Aluminium	PPS	FKM	567241
		NPT 2"			Aluminium	PPS	FKM	567242
50 mm DIN PN 16 flange			Aluminium	PPS	FKM	567243		
			Stainless steel	Stainless steel	FEP/PTFE	567244		
2" ANSI 150 LB flange		Aluminium	PPS	FKM	567245			
		Stainless steel	Stainless steel	FEP/PTFE	567246			
80	G 3"	20...733	66...616	Aluminium	Aluminium	FKM	567247	
	NPT 3"			Aluminium	Aluminium	FKM	567248	
		80 mm DIN PN 16 flange	Aluminium	Aluminium	FKM	567249		
		3" ANSI 150 LB flange	Aluminium	Aluminium	FKM	567250		
	100	100 mm DIN PN 16 flange	120...1200	–	Aluminium	Aluminium	FKM	567251
4" ANSI 150 LB flange		120...1200	–	Aluminium	Aluminium	FKM	567252	

8.5. Ordering chart accessories

Orifice Size		Materials	Article no.
[mm]	[inch]		
Oval gear			
DN 15	½"	PPS	567741 
		Stainless steel	567742 
DN 25	1"	PPS	567743 
		Stainless steel	567744 
DN 40	1½"	PPS	567745 
		Stainless steel	567746 
DN 50	2"	PPS	567747 
		Stainless steel	567748 
O-ring			
DN 15	½"	FEP/PTFE	567754 
		FKM	567755 
DN 25	1"	FEP/PTFE	567756 
		FKM	567757 
DN 40	1½"	FEP/PTFE	567758 
		FKM	567759 
DN 50	2"	FEP/PTFE	567760 
		FKM	567761 

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